The ECB's Revised Inflation Target

Compilation of papers
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The Implementation and Rationale of the ECB’s New Inflation Target
Authors: Pierpaolo BENIGNO, Paolo CANOFARI, Giovanni DI BARTOLOMEO and Marcello MESSORI

The New Euro Area Inflation Indicator and Target: The Right Reset?
Authors: Zsolt DARVAS and Catarina MARTINS

The ECB’s New Definition of Price Stability: Better but Short of Specifics
Author: Charles WYPLOSZ

A Welcome Revision Rather Than a Revolution
Authors: Christophe BLOT, Caroline BOZOU and Jérôme CREEL
The Implementation and Rationale of the ECB's New Inflation Target

Pierpaolo BENIGNO, Paolo CANOFARI, Giovanni DI BARTOLOMEO and Marcello MESSORI
Abstract

In July 2021, the ECB’s target was revised, specifying that the 2% inflation rate threshold should be applied symmetrically and with a medium-term orientation. We argue that a symmetric inflation target can significantly contribute to anchoring inflation expectations and to limiting the risks due to the zero- and/or effective-lower bound constraints. The monetary policy strategy revision will play a key role in the policy mix between fiscal and monetary policies for the post-pandemic recovery.

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<th>Full Form</th>
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<tr>
<td>APP</td>
<td>Asset purchase programme</td>
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<tr>
<td>ECB</td>
<td>European Central Bank</td>
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<td>ELB</td>
<td>Effective-lower bound</td>
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<td>EP</td>
<td>European Parliament</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAIT</td>
<td>Flexible average inflation targeting</td>
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<td>FED</td>
<td>Federal Reserve</td>
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<tr>
<td>FOMC</td>
<td>Federal Open Market Committee</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>HICP</td>
<td>Harmonised Index of Consumer Prices</td>
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<tr>
<td>ICT</td>
<td>Information and communication technologies</td>
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<tr>
<td>PEPP</td>
<td>Pandemic emergency purchase programme</td>
</tr>
<tr>
<td>TLTRO</td>
<td>Targeted longer-term refinancing operations</td>
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<td>ZLB</td>
<td>Zero-lower bound</td>
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EXECUTIVE SUMMARY

- **Economic theory suggests that central banks play a key role in determining the price level.** Accordingly, the Treaty on the Functioning of the European Union maintains that price stability is the main goal of the European Central Bank (ECB). The quantitative definition of price stability should, however, be determined by the ECB's strategy. This definition has evolved over time.

- **The ECB's Governing Council has recently provided a new definition of price stability,** implying that the ECB's inflation target is equal to exactly 2%. The target is symmetric, i.e., positive, and negative deviations are equally costly. The rule is tempered by the redefinition of the medium run and the introduction of the proportionality principle, which should provide the necessary flexibility to the conduct of monetary policy.

- **The rationale of the strategy change lies in the decline in the natural rate of interest.** This decline occurred because of several factors: the slowdown in productivity growth, demographic issues, and debt deleveraging processes. After the global financial crisis, the natural rate of interest reached even negative values. A higher inflation target is the appropriate response to the fall in the natural rate of interest.

- **The interaction between the zero-lower bound and the inflation rate does not result in the simple justification of a buffer on inflation;** it also requires an appropriate dynamic adjustment.

- **The Federal Reserve (Fed), too, has revised its strategy.** Just like the ECB, the Fed fixed a 2% inflation target, although it specified that if inflation were persistently to remain below 2% for some time, the central bank would have to keep inflation above 2% for the same period. Here the rule is tempered by the Fed's dual mandate, that is, not only maintaining price stability but also the stability of employment in the macroeconomy.

- **The main flaw identified in the ECB’s new strategy is that it fails to connect the new target to history dependence and, hence, to put the ECB’s forward guidance on more solid bases.**

- **The ECB’s revised inflation target will, nevertheless, play a key role in promoting better coordination between the monetary policy and fiscal policies (policy mix) that will be implemented to foster recovery in the EU post-pandemic environment.**
1. INTRODUCTION

The European Central Bank (ECB) has recently revised its strategy (cf. ECB, 2021a and 2021b). At the start of the monetary union (1999), the primary goal of the ECB strictly concerned price stability; and the quantitative definition of this stability was an inflation rate of "below 2%". This quantitative definition became the ECB's target. The 2003 strategy review changed the target to "below but close to 2%". Now, according to the 2021 revision of the ECB's strategy, the 2% has become the reference point so that the medium-term inflation rate should neither exceed nor remain below this symmetric threshold.

The evolution of the ECB's strategy has led to changes in its target, but not in its primary goal (price stability). In this paper, we aim to examine the main strength and weakness of the ECB's new quantitative target in the current framework and to discuss how the revised strategy is likely to shape policy, considering the side effects and interplay between the ECB's secondary goals (e.g., financial stability, and growth and employment) and the effectiveness of non-conventional monetary policy instruments. However, to assess the impact of the new target aimed at pursuing price stability, it is necessary to shortly focus on the analytical meaning of the primary goal.

As explained by the great economists of the past, the value of money is conceived as the "purchasing power of the income unit", where "the concept of purchasing power is based on the concept of price"; and "the numerical measurement of the price level" allows us to apply the value of money not only to individual commodities but also to all commodities, thus defining the "general purchasing power of money" (Schumpeter, 1917-18; Engl. transl. 1956: 162, 165, and 166). In this respect, Wicksell (1898; Engl. transl., 1936: 4) maintains that "[…] if it were in our power to regulate completely the price system of the future, the ideal position, affording common advantage to the overwhelming majority of the various groups of interests, would undoubtedly be one in which […] the general average level of money prices […] would be perfectly invariable and stable". Then, Wicksell (1898; Engl. transl., 119-21) states that the central bank determines the monetary interest rate; and the equality between this rate and the varying natural rate of interest (here to be assimilated to the rate of return on capital) is the condition for price stability.

Similarly, Keynes (1930: 137) affirms: "The conditions for the equilibrium of the purchasing power of money require that the banking system should so regulate its rate of lending that the value of investment is equal to savings". Finally, even if Keynes (1936: 207) emphasises that "there are certain limitations on the ability of the monetary authority to establish any given complex of rates of interest […]", he will recognise that central banks aim at determining these rates to stabilise the general level of prices.

The above quotations stress two important points.

1. The three quoted great economists agree that central banks play an essential role in determining the value of money, which is based on prices. It is worth stressing that, in this case, "essential" has a specific meaning: it is impossible to determine the value of money in an economic system based on fiat money without the intervention of the central bank's policy tools. In fact, in such a system, the central bank's liabilities define what a currency is, and what is its value.

2. In so doing, these three authors recognise that one of the main goals of the central bank is price stability.
Different "monetary doctrines" are hence all compatible with the main goal attributed to the ECB by the European Treaties. Keynes (1936) would add that a central bank should also contribute to the selection of the full employment equilibrium in the set of multiple equilibria mainly characterised by involuntary unemployment; Schumpeter (1912) would emphasise that a central bank should also grant liquidity to commercial banks financing innovators and imitators. Nevertheless, their different monetary theories do not substantially question price stability as (one of) the main aim(s) of the ECB.

Our conclusion does not imply that the debate on the ECB should only be reduced to a discussion on its main goal and target. European economic governance has attributed other features to the central bank: for instance, independence from national governments and their fiscal policies; the enforcement of rules with limited room for discretion, and so on. These properties do not correspond to the prescriptions of all the different monetary approaches and have evolved in different periods of the euro area’s existence. However, it is not in the scope of the present paper to provide further details on these aspects. Here, it is sufficient to point out that the ECB’s goal of price stability has not been influenced by the evolution of the theoretical debate on the central bank’s independence or on “rules vs. discretion”. On the contrary, this evolution has accompanied the changes in the ECB’s conduct and the related revisions of its target.

In principle, the achievement of the price stability goal could be effectively based either on quantitative rules or on discretionary choices related to the phases of economic cycles. In the case of the ECB, the reference to a specific quantitative target (rate of inflation below of 2%) perfectly corresponds to the prescriptions of strict rules without much room for discretion. In turn, the 2003 change in the ECB’s target (below but close to 2%) allowed the central bank to back the euro area’s economic growth in the middle of the first decade of the new century without increasing policy interest rates; and, later, this change was crucial for supporting the launch of unconventional monetary policies without violating the ECB’s main goal and strategy. In fact, at the end of 2013 and in the first quarters of 2014, the euro area was at high risk of deflation; and the ECB’s first attempts to decrease the probability of deflation by means of conventional monetary policy tools were unsuccessful. Hence, the ECB was legitimised to make recourse to unconventional tools.

The further changes recently made in the ECB’s strategy (2% as the symmetric reference point) seem important for easing the management of the current positive but unstable equilibrium in the policy mix characterising the post-pandemic phase. As we pointed out elsewhere (e.g., Benigno et al., 2021; Buti and Messori, 2021), the current policy mix is quite expansionary and the ECB’s balance sheet is accumulating a growing amount of government bonds issued by euro area Member States. Hence, in the near future, an important question will be how to redesign the monetary policy stance in order to obtain a composition of the ECB’s balance sheet that is compatible with price stability and, in the meantime, a policy mix that is compatible with the sustainable economic development of the euro area and the European Union (EU).

The above considerations show that the reviews of the ECB’s quantitative target have played and can continue to play an important role in supporting changes in the EU’s economic system. Moreover, our rudimentary reference to the history of economic analysis suggests that the interaction between the ECB’s main goal and the ECB’s target is not only empirically significant but also has a theoretical background. The aim of this paper is to provide the readers with a solid feedback on these statements. Its remaining parts are organised as follows. Section 2 explains the process leading to the ECB’s current

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1 The reference is to the theories of Wicksell (1898) or Schumpeter (1912), based on banks’ credit, as well as to that of Keynes (1936), based on an exogenous supply of money and on the “liquidity preference”. Most recently, the same result is expounded by the new-Keynesian/neo-Wicksellian literature (see Woodford, 2003).
strategy review. Section 3 discusses the rationale behind the last revision of the inflation target. Section 4 compares the recent choices of the ECB to the parallel choices of the Federal Reserve (Fed) for the implementation of new strategies. Section 5 concludes the paper.
2. THE REVISION OF THE ECB’S INFLATION TARGET

The Statute of the European System of Central Banks (ESCB) emphasises that, “in accordance with Article 127(1) and Article 282(2) of the Treaty on the Functioning of the European Union”, the main objective of the ESCB “shall be to maintain price stability” (see Article 2). The ESCB is defined separately from the ECB: the former represents the central banks of the Member States belonging to the EU, whereas the latter has a legal personality as an EU institution. However, in what follows, we will neglect this distinction. In fact, according to Article 9(2) of the Statute, the ECB is responsible for ensuring that the ESCB pursues its objective and tasks. Hence, from an economic point of view, we can simply state that the ECB aims at price stability. The problem is that the Treaty and the Statute do not offer a quantitative or qualitative definition of price stability. This definition is a task that is implicitly attributed to the ECB Governing Council. As clarified by Article 12(1) of the Statute, “the Governing Council shall adopt the guidelines and take the decisions necessary to ensure the performance of the tasks entrusted to the ESCB […].”

In one of its first meetings (13 October 1998), the ECB Governing Council announced that price stability should be defined as “a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2 %”; and it added that this maximum threshold of the inflation rate should be met over the medium term. Hence, the Governing Council opted for a quantitative determination of the ECB’s target. Then, in the meeting of 8 May 2003, it specified that, in the medium term, price stability should require an inflation rate not only below but also “close to 2 %”.

This change in the monetary strategy pursuing price stability was justified by several factors. According to the same Governing Council, the experience of the past monetary policy and the analytical results reached in the economic literature suggested to have recourse to an adequate “safety margin” to bring “the risks of deflation” under control, to adjust for “the possible presence of a measurement bias in the HICP”, and to consider “inflation differentials within the euro area”.

The justifications provided were sound and reasonable. It is understandable that, at the time of the Maastricht Treaty, the risk of deflation or overly moderate dynamics of price levels was not at the top of the European policy-makers’ concerns; the previous two decades had been characterised by high inflation and the related difficult processes of price stabilisation in a large part of European countries. Conversely, during the 1990s, price dynamics followed more irregular trends so that the problem of also satisfying a minimum threshold in the inflation rate became a potential policy issue. Moreover, in the same decade, the production system of the EU implemented a rich flow of innovations thanks to firms’ massive adoption of the “information and communication technologies” (ICT); and the ICT led to product innovations. Hence, the ICT’s outputs implied an overassessment of the inflation rate because the measurement of price dynamics often referred to goods and services whose quality was largely improved even if their label was unchanged (hedonic prices). Finally, the empirical evidence of the euro area shows that a moderate but positive average rate of inflation can be a necessary tool for effectively applying the same monetary policy stance to countries with significant differences in terms of economic cycle and output potential. Policy interest rates cannot fully control the divergences between Member States because these rates are constrained by lower bounds (see Section 3 below).

Our provisional conclusion is that, at the beginning of the new millennium, the ECB had good reasons to avoid inflation rates that could have systematically been either too high or too low. The impact of the international financial and “real” crises (2007-2009) and the euro area’s “doom loop” between the

2 The Governing Council emphasised the continuity between the two definitions: the new definition was still based on the original one that had worked “satisfactorily” in the previous four years and more of the euro’s existence.
sovereign debt crisis and the banking sector’s liquidity and insolvency crisis supported ex post the decisions taken by the ECB Governing Council in May 2003. At the end of 2008, the monetary policy of the Fed reached the zero-lower bound (ZLB); and from the last quarter of 2013 to the third quarter of 2014, the euro area experienced phases of deflation and the decreases of ECB’s interest rates to the ZLB.

Since the end of 2014 the stance of the ECB’s monetary policy has been ultra-expansionary due to the recourse to unconventional tools. The announcement and the implementation of a systematic purchase of government and corporate bonds in the secondary financial markets were based on the asset purchase programme (APP). The easing of the open market operations, which fixed negative interest rates on the refinancing of specific groups of banks, were due to the strengthening of the targeted longer-term refinancing operations (T-LTRO). However, even before the deep economic depression triggered by the COVID-19 shock, the attainment of an effective lower bound (ELB) and the pumping of a huge amount of liquidity into the economic system were insufficient to meet the ECB’s new quantitative definition of price stability: the average inflation rate remained largely below the maximum threshold of 2% in the medium term. At least in the short term, the same statement applies to the further easing of the ECB’s monetary policy implemented since March 2020: despite the launch of the new pandemic emergency purchase programme (PEPP) and the strengthening of the APP and the T-LTRO III, during the 2020 economic depression, the euro area’s price dynamics did not exceed 0.25%, that is, a percentage far from 2%.

The current year (2021) is characterised by a strong rebound of the European economy. Even if it is still vulnerable, this rebound coincides with an inflation rate above 2% in the euro area. On average, the euro area’s annual inflation rate to August 2021 was equal to 3% and that to September 2021 reached 3.4%. Hence, according to the 2003 target determined by the Governing Council, the ECB should be ready to change its monetary policy stance if the inflation rate stabilises at the levels reached in summer 2021 also in the last months of the current year and in the first quarters of 2022. However, this type of policy initiative would hinder the euro area’s possible economic recovery and would nip in the bud any long-term sustainable development. Moreover, it could be unjustified from a substantial point of view. This viewpoint will be developed in Section 3. Here let us just refer to the determinants of subdued inflation. Gros (2021) maintains that the current inflation data are largely due to the unusually low prices of 2020: if we look at the data “over a two-year period that bridges COVID-19”, it will follow that the HICP index “has risen only by 1.5% per year”; and, repeating the same exercise for Germany, we will obtain an average inflation rate “just above 2% per year” (compared to 4.1%).

In this perspective, the new quantitative definition of price stability that resulted from a long preparation (starting before the outbreak of the pandemic) and that was adopted by the ECB Governing Council in its meeting of 8 July 2021 has occurred at a very propitious moment. According to the new quantitative definition approved by the Governing Council, “price stability is best maintained by aiming at a 2% inflation target over the medium term”. This obviously means that the 2% ceases to be the maximum threshold and becomes the symmetric reference point for inflation, in the sense that “negative and positive deviations of inflation from the target are equally undesirable”. The concept of symmetry in the conduct of monetary policy is indeed nothing new. Draghi (2016) already specified that “it is equally important that we pursue our objective symmetrically”.

As in the case of the previous change in the monetary strategy, there is a continuity between the new definition and the 2003 one. However, there are at least three reasons why the ECB’s new target

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3 The evolution of the ECB’s monetary policy in the different periods of the euro area’s existence and its impact on the economic activities are analysed by Rostagno et al. (2019). A specific focus on the ECB’s unconventional monetary policies is offered in Rostagno et al. (2021).
incentivises a more expansionary stance in the euro area's monetary policy and why it can, thus, reduce the risk of a dangerous sudden reverse in its stance and in the stance of the EU's current policy mix.

The first reason is obvious: symmetry means that the quantitative inflation target is 2% and not below (even if close to) 2%. The second reason depends on changes introduced in the calculation of the HICP and here neglected (even if we think that these changes are significant and appropriate). The third reason is the most interesting from our point of view: despite the symmetric reference to 2%, the new strategy allows for an important asymmetry justified by specific economic conditions. This asymmetry applies to an economy "operating close to the lower bound on nominal interest rates", that is, one facing a negative cyclical phase or a negative trend. In this case, it is conceivable to design a monetary policy stance tolerating "a transitory period in which inflation is moderately above target", that is, a period in which the inflation rate is above 2% even in the medium term. In fact, the most significant risk is an entrenchment of the "negative deviations from the inflation target"; and this risk can be avoided only if an "especially forceful and persistent monetary policy action" is implemented.
3. THE ECONOMICS BEHIND THE STRATEGY REVIEW

Since the 2003 strategy review, important factors have challenged the world economy and the euro area’s economic system: the strengthening of globalisation, the 2007-2008 global financial crisis, the European sovereign debt crisis, and the most recent COVID-19 shock. All these factors have concurred with the changes that largely justify the new 2021 strategy review. In fact, they have significantly contributed to an important macro fact that is related to an unobservable but key policy variable: the fall in the natural rate of interest. In turn, this fall is understood to have been at the root of two other macro facts relating to observable variables: namely, a subdued inflation rate which has averaged 1.6% in the euro area since 2007 (see Figure 1), and a long stay (since mid-2014) of policy rates at the (effective) ZLB.

Figure 1: Euro area annual HICP inflation rate

![Graph showing Euro area annual HICP inflation rate from 2002 to 2020 with shaded areas indicating financial crises.](source: Datastream)

3.1. The fall in the natural rate of interest

The natural rate of interest is, in an abstract sense, the real interest rate that the economy would reach absent frictions, were employment at the potential level and inflation stable. It represents the real interest rate that the central bank should achieve to better stabilise the inflation rate and output at their targets. Before the 2007-2009 financial crisis, the natural rate of interest was around 2% at an annual basis. With a 2% inflation target, the nominal interest rate – the policy interest rate – could thus be settled at 4%.

In combination with the ZLB on the policy interest rate, a natural rate of interest lower than 2% can create significant problems for the economy. Suppose that the natural rate of interest settles at –3%. With a 2% inflation target, this implies that the nominal interest rate should be fixed at –1% to stabilise

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This computation considers as valid the “Fisher equation”, for which the nominal interest rate is the sum of the real interest rate and the inflation rate (Fisher, 1930). See also Sun and Phillips (2004).
the economy. However, such a nominal interest rate level is not a feasible outcome in economic systems in which cash (coins and banknotes) circulates. Lack of arbitrage opportunities would prevent agents from borrowing at negative rates and invest in cash. Therefore, the ZLB constraint implies that the actual real interest rate should be settled at least at –2% in our economic systems because of the zero-nominal interest rate minus the 2% of inflation. Therefore, the actual real interest rate would be above the ideal –3% dictated by the natural rate of interest, and it will thus prevent the desired stabilisation of inflation as well as of economic activity. The economic system would experience an overly high real interest rate with contractionary effects, which could reduce economic activity and be likely to bring the inflation rate below its 2% target.

It should be emphasised that these effects can trigger a dangerous spiral, which tends to lead to a disinflationary and eventually to a deflationary trap. A lower inflation rate with a zero-nominal interest rate would further raise the lowest actual threshold of real interest rates, again bringing down the inflation rate, and so forth, up to the point of reaching a deflation. At this stage, the economy would experience positive actual real interest rates no matter the zero-interest rate policy followed by the central bank, and in contrast to the ideal negative natural rate of interest. The risk of this spiral has become quite likely in recent years. Estimates for several advanced economies and for the euro area show a steady decline of the natural rate of interest starting from values above 4% in the 1970s to around 2% in the 1980s. After the global financial crisis, this decline has led to figures below zero for the euro area.

The theoretical literature underlines several factors responsible for the fall in the natural rate of interest: the slowdown in productivity growth, demographic factors, and debt deleveraging processes.

In a high-growth economy, the equilibrium between savings and investment is compatible with high real interest rates. With a slowdown in economic growth, the real interest rate should fall to satisfy the macroeconomic stability conditions. In the advanced economies, there is a decline in the growth rate of potential output that is largely due to a decline in the growth rate of total factor productivity (see Lane, 2019). Hence, the natural rate of interest decreases, and the real interest rate should also decrease to stabilise the inflation rate and the economy.

The second factor influencing the natural rate of interest is demographic. During the last decades, advanced economies have been experiencing a process of demographic transition towards low fertility and mortality: individuals have fewer children and live longer with the consequence that the number of elderly people increases with respect to the working-age population. The macroeconomic consequence of these structural changes points towards a reduction in the natural rate of interest (see Brand et al., 2018). On the one hand, a decrease in the labour force and labour supply raises the capital-to-labour ratio even without additional investment; on the other hand, with everything else being equal, an increase in life expectancy raises the saving rate. These trends reduce the natural rate of interest, and thus the real interest rate required to stabilise the economy. One could maintain that the increase in the saving rate is partly offset by the increasing incidence of the elderly people who are prone to dis-save (see Modigliani, 1976). However, empirical evidence shows that, in the euro area, elderly people (65-74 years of age) own financial wealth that is largely above the average of the other age classes (see Eurostat, 2020).

The 2007-2009 global financial crisis has further led to a substantial fall of the natural rate of interest.

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5 We are aware that, since mid-2014 and a fortiori since April 2016 and March 2020, the ECB has utilised various monetary tools to create opportunities of arbitrage even at negative interest rates. However, from a theoretical point of view, it is possible to neglect this point. In fact, our analysis would remain valid, if the ZLB was replaced with an ELB characterised by negative policy interest rates. The validity of our reasoning only requires the existence of an ELB. In the following pages, to simplify the matter, we will refer to the ZLB as the minimum ELB.
so much as to reach negative values (e.g., Hong and Shell, 2019: 1). The loss of opportunities in financial markets, because of the debt overhang, has created incentives for borrowers to repay their debt and reduce their leverage. These decisions have possibly had the effect of limiting disequilibria and bankruptcies in some sections of these markets. However, the implementation of debt reduction by some agents leads to higher savings at given interest rates. Hence, to meet an aggregate balance, it is necessary to reduce savings in other parts of the economy; and this reduction can be only triggered by a fall in the natural rate of interest. It follows that there is a third factor requiring a fall in the real interest rate to stabilise the inflation rate and the economy.

It is worth noting that there are other factors responsible for the decline in the natural rate of interest. Let us just recall the increasing inequality in wealth and income distribution, the impact of the globalisation of capital markets, and the excess of net savings in various advanced economic areas (the euro area included). We cannot analyse these factors in detail in this paper. It is sufficient to stress that a low level for the natural rate of interest, combined with the (effective) ZLB, represents a serious burden on economic activity and could put downward pressure on inflation and constrain the economy at very low nominal interest rates.

3.2. Inflation buffer

A higher inflation target is the appropriate policy response to the fall in the natural rate of interest for at least two reasons. Under normal conditions, a higher inflation rate implies a higher nominal interest rate for a given stabilising real interest rate; therefore, a higher inflation rate leaves policy-makers with more room for action if adverse economic shocks require a fall in the policy interest rate. Thus, hitting the ZLB becomes less likely. The second reason for a higher inflation target is justified by the stimulating effects that this target can have when the economy is at the ZLB. A higher inflation target, if embedded appropriately in inflation expectations, can reduce short and long-term real interest rates stimulating the economy and shortening the duration of the trap at zero interest rates.

These two reasons have certainly played a role in the ECB’s recent strategy review aimed at fixing the target symmetrically at 2%, rather than below but close to this threshold. A positive inflation buffer is justified by other notable reasons that need to be mentioned: the presence of downward nominal rigidities, euro area cross-country inflation differentials and measurement errors.

The presence of downward nominal rigidities justifies a positive inflation rate. Let us assume that, despite their rigidity, nominal wages are constrained to adjust downward to overcome a macroeconomic disequilibrium. This decrease tends to cause a recessionary shock on the demand side and a parallel significant fall in the economic activity, so that the real wages would remain too high in terms of the required initial adjustment. As a consequence, a large part of the population (mainly workers) would be worse off without significant improvements at the macroeconomic level. In this situation, a positive inflation rate “greases the wheels”, allowing for a fall in real wages even if nominal wages do not decrease, thereby reducing the adverse effects of the contractionary shock. As discussed in Bobeica and Sokol (2019), nominal wage rigidities were still a persistent phenomenon in the euro area immediately before the pandemic shock.

For the non-homogeneous characteristics of the national economic systems, the euro area is subject to important variations in the inflation rates across Member States. Each national economy faces different structural costs, handles different degrees of market competition, and is able to implement different adjustments to either common or country-specific shocks. To minimise the impact of these

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6 This result would be achieved more effectively and with minor social costs if the purchasing power of low nominal wages was protected by means of adequate social mechanisms.
peculiarities and different adjustments, a positive inflation rate is required. Let us simply underline that, were the inflation target for the overall area at zero percent, countries in expansion would record positive inflation rates while countries in recessions would face a costly deflation. Targeting a positive inflation rate for the area avoids the situation in which countries facing adverse shocks need to adjust through a fall in prices. Finally, as recalled in Section 2 with respect to the adoption of new technologies, measurement errors are also a reason for a positive inflation rate. In fact, these errors imply a positive inflation bias.

All these arguments support the setting of a positive inflation target as a buffer. By moving the target from a range between zero percent to 2%, as in the original 1998 framework, to close to 2% in the 2003 revision, and to the focal point of 2% in the last revision, the ECB has been able to take account of all the above reasons in an appropriate way. The largest part of these reasons was, actually, already discussed in the 2003 revision (see also Section 2, above). However, the new 2021 strategy review has been justified by a series of unfortunate events that have characterised the last fifteen years and that have strengthened the need for an inflation buffer.

### 3.3. Overshooting the inflation target after ZLB episodes

The interaction between the ZLB and the inflation rate does not result in simply justifying a buffer on inflation; it also requires an appropriate dynamic adjustment. The Governing Council’s statement of the 2021 review is suggestive of this further crucial aspect when it endorses some of the conclusions reached by the theoretical literature on the topic. Point six of the ECB’s new monetary policy strategy says that:

> “The Governing Council recognises the importance of taking into account the implications of the effective lower bound. In particular, when the economy is close to the lower bound, this requires especially forceful or persistent monetary policy measures to avoid negative deviations from the inflation target becoming entrenched. This may also imply a transitory period in which inflation is moderately above target.”

Not only does the 2021 review re-establish a symmetric target, but it also goes in the direction of justifying upward transitory deviations of the inflation rate from the target.

The literature on the ZLB has characterised the optimal exit from shocks that bring the economy to the ZLB by underlining three peculiar features of the adjustment: a prolonged period of monetary policy accommodation, inflation overshooting at the time of exiting the ZLB, history dependence (see among others: Krugman, 1998; Eggertsson and Woodford, 2003). These three features lead to three related implications.

The first implication is that monetary policy should be very accommodative, where the degree of accommodation is measured by the stay at the ZLB which should still be longer than the duration of the shock. This means that, even if the natural rate of interest reverts to normal values so that the lift-off of the policy interest rate from zero could be feasible, the ECB should instead remain committed to keeping this policy rate at the ZLB for some additional quarters. The second implication is that the inflation rate should exceed the inflation target at the same time in which the natural rate of interest returns to normal conditions. The third peculiar implication is that policy should be history dependent, meaning that the ECB should undo the negative gaps experienced during the trap with positive gaps at the exit in a way as to make up output and inflation losses.

The above implications can be intuited in a simple way. The ZLB is a constraint that prevents the optimal adjustment because, under significant perturbations to the economy, this adjustment would
require the policy interest rate to go negative. A prolonged accommodative policy is justified on the grounds that it can make up the "overly" restrictive policies the central bank is constrained to follow because of the ZLB. The zero-interest-rate policy should last longer because it must compensate for the periods in which rates should have gone negative.

Inflation overshooting reduces the costs of the ZLB when the economy is adversely hit by a recessionary shock. An economy in a liquidity trap is an economy with an overly high level of savings with respect to what would be optimal (that is, net savings equal to zero). In this situation, the effective real interest rate exceeds the natural rate of interest. Given that the nominal interest rate is prevented from falling beyond the ZLB, the real interest rate can be lowered thanks to the expectations of the price level being sufficiently higher in the future. Therefore, inflation expectations should sufficiently rise to be compatible with a lower long-run real interest rate. In a similar way, to the requirement of a longer stay at the zero bound, the higher inflation rate at the exit can also compensate for the periods in which the policy rate was constrained by the ZLB. All these policies stimulate a faster recovery and reduce the duration of the trap as well as the related costs.

History dependence is an important feature of the adjustment to avoid that "bygones are bygones". The economy should not only recover but also follow a path that makes up the losses and negative gaps experienced during the stay at the ZLB. It is likely that during this period, the economy has experienced both a recession and a period of below-target inflation; and both these factors have usually produced a departure from the before-crisis nominal GDP trend. The optimal response to such a shock is to reconnect the nominal GDP path to the pre-crisis trend. Such an objective can only be achieved if the gaps accumulated in the past are appropriately accounted and compensated for by future gains. This is the reason why inflation should overshoot the target; otherwise, the previous trend would never be reached.

There is an additional problematic key aspect of these three implications. Each of these implications involves commitments to future actions that, once the time of their implementation arrives, might no longer be optimal and therefore will unlikely be pursued. Given that expectations of economic agents are critical for the recovery, the lack of credibility regarding the actual future implementation of such accommodative policies could undermine the recovery by nullifying the effects of any policy announcement.

This problem is made more dramatic by another failure in the ECB's 2021 strategy. We acknowledge that this strategy partially accounts for the desiderata emphasised by the literature, because the ECB allows for "a transitory period in which inflation is moderately above target"; and this specification underlines the ECB's commitment to enable the inflation rate to overshoot the target. However, the 2021 strategy leaves completely undetermined the direction and the magnitude that these deviations should have with respect to the losses faced during the period the economy was at the ZLB. There is no history dependence in the ECB's policy implementation. Hence, this policy could be insufficient for shaping expectations in the right direction, for it leaves open the quantification of what "transitory" and "moderately" mean, risking that agents would expect policy to contract at the first inflation scare.

The next Section will further discuss this point in connection with the Fed's review strategy.
4. THE IMPLEMENTATION: FED VS. ECB

The Fed has also recently revised its strategy to raise its inflation targets. Actually, the Fed had moved earlier (August 2020), and the ECB followed (July 2021). Although the picture was broadly the same, the responses of the two central banks cannot be treated identically. There are common points but also significant differences.

Let us start with the common points. Both institutions pointed to the downward shift in real interest rates that were required to stabilise the economy, and the consequent high risk of hitting the (effective) ZLB during downturns. As a result, both central banks argued in favour of higher inflation rates and inflation expectations as a preventive remedy for the risk of being constrained by the ZLB. This position is based on descriptive evidence. Figure 2 plots the inflation rate dynamics since 1999 in the two economic areas. After the financial crisis, inflation is systematically below the 2% in both cases. Even if referring to the entire sample, the average inflation rate remains below 2%. The average inflation rate of the United States is equal to 1.4% in the pre-strategy review period (2013-2020), while it is equal to 1.8% for the whole sample. Analogously, the average inflation rate of the euro area is equal to 1.6% over the period from 2003 to 2021, that is, when this rate should have been "close to but below 2%". Moreover, it is equal to 1.2% in the period after the global financial crisis and before the strategy review (2009-2021); again, the figure is definitely below, but not quite close to 2%.

In both strategy reviews, the inflation target is fixed at 2%. However, the specific strategies adopted by the Fed and ECB differ in their general objective, as well as in the perimeter and the tools utilised.

The Fed reiterated its firm commitment to realising its statutory mandate from Congress, that is, promoting maximum employment, stable prices, and moderate long-term interest rates. However, it revised not only its inflation target but also the other components of its monetary policy framework, and mainly the policy tools and the communication practices. The Fed motivated its strategy review with the growing awareness of the structural transformations of the economy and, more specifically, with the observed structural decline in the natural rate of interest and with the diminished sensitivity of inflation to the slack in productive resources (see also Powell, 2021).

---

7 Estimates of the natural rate of interest in the United States show that this rate declined from above 2% in the period preceding the 2007–2009 recession to less than 1% in the following years.
On 27 August 2020, the Federal Open Market Committee (FOMC)⁸ introduced a new regime of inflation targeting, which can be labelled as flexible average inflation targeting (FAIT). The FOMC:

“judges that longer-term inflation expectations that are well anchored at 2 percent foster price stability and moderate long-term interest rates and enhance the Committee’s ability to promote maximum employment in the face of significant economic disturbances. In order to anchor longer term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.”

In describing its new strategy, the Fed highlights the importance of employment (and financial stability) at least on a par with the goal of price stability, thus confirming its dual mandate⁹. It also underlines that the objective of medium-term employment cannot be precisely specified in quantitative terms, so that there is a certain degree of discretion in the conduct of monetary policy:

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⁸ This Fed committee, which is in charge of determining the monetary policy of the area, is composed of twelve members: the seven components of the Board of Governors, the president of the New York Fed, and four out of the eleven presidents of the other Federal Reserve Banks selected on a rotating basis.

⁹ “The Committee judges that the level of the federal funds rate consistent with maximum employment and price stability over the longer run has declined relative to its historical average. Therefore, the federal funds rate is likely to be constrained by its effective lower bound more frequently than in the past. Owing in part to the proximity of interest rates to the effective lower bound, the Committee judges that downward risks to employment and inflation have increased. The Committee is prepared to use its full range of tools to achieve its maximum employment and price stability goals.”
"the maximum level of employment is a broad-based and inclusive goal that is not directly measurable and changes over time owing largely to nonmonetary factors that affect the structure and dynamics of the labour market. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee’s policy decisions must be informed by assessments of the shortfalls of employment from its maximum level, recognizing that such assessments are necessarily uncertain and subject to revision."

As we already stressed, the ECB’s 2021 strategy review implies an inflation target strictly equal to 2%. The main difference from the previous target ("below but close to 2%") is marked by the emphasis on the symmetry: the ECB’s new strategy implements "the price stability objective in terms of an unambiguous and symmetric target". The 2003 formulation of the target tended to lead "[...] to possible ambiguity about the level of the inflation aim and a perception of the aim being asymmetric, which – in proximity to the effective lower bound – may have contributed to the low-inflation environment". Symmetry in the inflation target means, instead, that negative and positive deviations of inflation from the target are equally costly and undesirable. Therefore, the ECB would be ready to act with the same strength in case of an inflation rate either higher or lower than 2%.

It is important to stress that the setting of the ECB’s new target is accompanied by two further concepts: medium term and proportionality. The first concept already played a significant role in the older strategies. Now, it is however underlined that the orientation to the medium term "[...] allows the Governing Council to cater in its monetary policy decisions for other considerations relevant to the pursuit of price stability". On the other hand, the principle of proportionality, which is mentioned with insistence in the review, allows the ECB to combine the commitment to a symmetric inflation target with some discretion margins in the implementation of monetary policy. It is, in fact, emphasised:

"that faced with large adverse shocks, the ECB’s policy response will, as appropriate and based on a careful proportionality analysis, include an especially forceful use of its monetary policy instruments. In addition, closer to the effective lower bound, it may also call for a more persistent use of these instruments. This may also imply a transitory period in which inflation is moderately above target."

The final part of the last quotation suggests that these two concepts, which are ancillary to the 2% symmetric target, can offer the ECB some degrees of freedom in approaching the 2% inflation target (Bini Smaghi, 2021). As explicitly argued in the new strategy review:

"the medium-term orientation provides flexibility to take account of employment in response to economic shocks, giving rise to a temporary trade-off between short-term employment and inflation stabilisation without endangering medium-term price stability. It also allows the ECB to take account of financial stability, where appropriate, in view of the interdependence of price stability and financial stability. The use of such flexibility could also be the result of a careful proportionality assessment of the appropriate policy measures."

This quotation has, at least, two implications. First, the definition of "medium term" refers to a time window for achieving the inflation target which is different from that imposed by the lags of monetary policy. Secondly, the reference to proportionality confirms the statement included in the quotation at the end of the previous paragraph: in special circumstances, the ECB is likely to tolerate an inflation rate above the 2% target for longer than the medium term.

In this respect, the definitions of medium term and proportionality go in the same direction as the Fed’s claim that it would not be appropriate to specify a quantitative goal for active monetary policies,
recognising that assessments of the shortfalls of employment are uncertain and subject to revision. In the case of the euro area, the mandate of the central bank is narrower and, as such, less binding; however, the ECB should account for the additional constraints due to the lack of a political union.

This common point in the new inflation strategies of the Fed and the ECB is strengthened by other important similarities. Both central banks stress the downward shift in the natural rate of interest and the consequent growing risks of hitting the (effective) ZLBs during downturns. Consequently, in some way, both institutions also emphasise the need for the inflation rate to be higher on average than in the past. The theoretical literature concludes that policies of nominal GDP targeting are a good approximation of what policy-makers should achieve when shocks bring the economy to the ZLB. However, differently from the ECB, the Fed explicitly refers to a target defined on an average 2% inflation rate through time: if the inflation rate is below the target for a given percentage and a given number of periods, the new strategy will require that the Fed pursue an inflation rate above the target for the equivalent percentage and periods. It is worth stressing why this strategy emphasises the crucial differences between the ECB’s symmetric target and its possible tolerance of a higher inflation rate when the economy hits the ZLB.

The Fed’s new target implies that, if the economy is in a period of prolonged low-price dynamics and high unemployment, subsequent monetary policies will push prices above the 2% target and will thus also ensure low unemployment for an equally long-time period. This strategy highlights a well-known point: the conditions of the real economy and employment are prominent in the Fed’s dual mandate, whereas they are subordinated goals in the ECB’s mandate. However, there is another main difference. Let us assume that the economies of both areas are hit by a period of high inflation and that the consequent restrictive monetary policies lead to a downturn in the economic and inflation cycle just after a prolonged time lag. In the United States, the reference to the average inflation rate would imply that the Fed’s monetary policy should continue its restrictive stance for an equivalent time lag despite the economic recession. On the contrary, in the euro area, the ECB should immediately switch to an expansionary monetary policy due to the symmetric costs associated with the deviations from the target.

It would be inappropriate to conclude that the ECB’s new strategy is more effective than the Fed’s for at least two reasons. First, the dual mandate of the Fed would weaken the pro-cyclical stance of monetary policy characterising the paradoxical case examined above. The prominent role of employment and economic stability in the Fed’s main goals would kick in, appropriately trading off the overly high past inflation with the overly high current unemployment. Secondly, due to its average 2% target over a given horizon, the Fed accounts for history dependence: periods of below-target inflation are made up by periods of above-target inflation. Therefore, as we noticed above (see Section 3), the Fed is in the condition to make credible commitments to its future monetary policy and to influencing agents’ expectations. On the contrary, the ECB’s monetary policy cannot make such commitments because it cannot be based on history dependence.

Let us add that these two aspects are not sufficient to overturn the previous hypothesised hierarchy in the relative effectiveness of the ECB’s and the Fed’s new strategies. In this respect, it is sufficient to note that the dual mandate of the Fed risks undermining the strength of history dependence. According to the first aspect, the 2% target of the average inflation rate can be overcome by the other component of the dual mandate; however, if this possibility becomes common knowledge, the credibility of future monetary policy commitments will largely vanish. The conclusion is that both central banks have difficulties making commitments about their future monetary policies, although for different reasons.

To give a partial illustration of the above discussion, consider Figure 3 which plots the nominal GDP of the euro area since 2007. As can be seen, the 2007-2008 crisis produced a significant contraction in
nominal GDP, which recovered at the end of 2009 with a trend that was below the one it would have followed had there been no crisis. In a similar way, the recovery after the 2011-2012 sovereign debt crisis assumed a trend which was also below the pre-crisis one. Let bygones be bygones. The optimal response would have been to reflate the economy in a way as to reconnect its nominal GDP path to the pre-crisis trend. This reflation did not happen because inflation was below target during that period, averaging to only 1.5% during the period 2008-2019 (see Figure 1 above).

Figure 3: Euro area nominal GDP

Source: Datastream.

Note: The blue line denotes the actual trend in the nominal GDP of the euro area, whereas the three red dashed lines denote the hypothetical trends that nominal GDP would have followed in absence of the respective recessions of 2008-2009, 2011-2012 and 2020.

Following the recession due to COVID-19, inflation as well as the nominal and real GDPs have now picked up. However, the ECB’s statement of the new strategy review does not specify until which point inflation will be tolerated. A direction in terms of nominal GDP or average inflation targeting would have clarified the magnitude of the reflation needed for a complete recovery.
5. CONCLUSIONS

Price stability remains at the heart of the ECB’s mandate, and the monetary policy strategy specifies the quantitative terms of this goal. In the 2021 review of its strategy, the ECB has clarified that a 2% inflation target must be applied symmetrically with a medium-term orientation. Symmetry towards 2% is the main novelty of this recent review.

These changes in the ECB’s strategy can appear negligible. In our paper we show, instead, that a 2% symmetric target can significantly contribute to anchoring inflation expectations and limiting the risks of ZLB constraints by also allowing for the possibility of inflation temporarily and moderately overshooting the target. This new target can, thus, improve the effectiveness of monetary policy and promote better coordination between monetary policy and fiscal policies (policy mix) in the EU.

These improvements do not mean that the ECB’s new strategy is without flaws. In the paper, we support the adoption of a symmetrical target on the basis of the optimality of building an inflation buffer against the fall in the natural rate of interest and the higher frequency of ZLB episodes. However, the ECB’s new strategy fails to connect the new target to history dependence and, hence, to put the ECB’s forward guidance on more solid bases. In any case, a critical comparison with the new strategy implemented by the Fed in 2020 shows that overcoming this weakness is not an easy task.

Our general conclusion is that the new strategy represents an important step towards improving the effectiveness of the European policy by also endorsing the recent advances in the monetary policy literature. However, the main challenge for European policy in the post-pandemic period is centred on the evolution of the policy mix and, more specifically, on the related possibility of building stable coordination between national fiscal policies and a centralised EU fiscal policy. An efficient monetary policy can positively contribute to this aim; and the new symmetric ECB’s strategy can strengthen this contribution. Nevertheless, the crucial issue in this context remains the construction of a partial but permanent centralised fiscal policy.
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The New Euro Area Inflation Indicator and Target: The Right Reset?

Zsolt DARVAS and Catarina MARTINS
Abstract

This paper clarifies the main features of the European Central Bank’s revised inflation target in light of international practices, discusses the role of financial stability in the medium-term orientation of monetary policy decisions, and quantifies the possible impacts of the inclusion of the costs related to owner-occupied housing on the inflation indicator which is subject to the inflation target.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 15 November 2021.
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## LIST OF ABBREVIATIONS

<table>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>BoE</td>
<td>Bank of England</td>
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<tr>
<td>BoJ</td>
<td>Bank of Japan</td>
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<tr>
<td>CPI</td>
<td>Consumer price index</td>
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<tr>
<td>ECB</td>
<td>European Central Bank</td>
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<tr>
<td>FED</td>
<td>Federal Reserve</td>
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<tr>
<td>HICP</td>
<td>Harmonised index of consumer prices</td>
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<tr>
<td>NAWRU</td>
<td>Non-accelerating wage rate of unemployment</td>
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<tr>
<td>OOH</td>
<td>Owner-occupied housing</td>
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<tr>
<td>PCE</td>
<td>Personal consumption expenditures</td>
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<td>PCEPI</td>
<td>Personal consumption expenditure price index</td>
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EXECUTIVE SUMMARY

- The 2021 European Central Bank's (ECB) monetary policy strategy review resulted in useful changes to the monetary policy framework, informed by numerous thorough analyses done by ECB staff.

- The ECB's justification for the monetary policy review was significant structural changes in the economy since the previous review of 2003. These changes include a declining equilibrium rate of growth and lower equilibrium interest rates, which reduce the scope for interest cuts in a cyclical downturn. In our view, the ECB's systematic forecasting failure was an even more important justification for a review and revision of models.

- The most important change arising from the review has been the replacement of the earlier ambiguous inflation objective by a clear 2% symmetric inflation target. The previous objective might have been perceived as asymmetric, resulting in more forceful monetary actions in case inflation overshot 2% than when inflation fell short of 2%. In fact, both actual inflation and expected long-term inflation were close to 2% for about a decade after the previous review in 2003, suggesting that the 2014-2019 inferior inflation outcome cannot be attributed to perceived asymmetry alone.

- While the US Federal Reserve (Fed) decided for average inflation targeting in its 2020 monetary policy review, the ECB has not. The ECB's new target resembles the Fed's previous target. The Fed's main justification for an average inflation target is the anchoring of long-term expectations. ECB staff research presented an analysis of average inflation targeting, yet it is unclear why the ECB Governing Council did not opt for average inflation targeting.

- The strategy review maintained the medium-term horizon for maintaining price stability, but did not define what "medium term" means, and added an extra layer to the reasoning. Financial stability concerns could be a factor influencing the actual time horizon of the medium term. While there are synergies between monetary and financial stability policies, the two policy areas need different tools. More clarity is needed on the influence of financial stability concerns on monetary policy and its time horizon, also to ensure ECB accountability.

- The ECB plans to include costs related to owner-occupied housing (OOH) in the inflation indicator. In the US, the "rental equivalence" method is used to include OOH costs, while Eurostat and ECB seem to favour the "net acquisition" approach. The latter might involve an asset price component in the inflation indicator. We calculate that adding an OOH price index which is based on the net acquisition approach to the HICP would have increased annual inflation by 0.23% points on average from 2016 to 2020, but adding an OOH price index which is based on the rental equivalence method would have left HICP practically unchanged.

- Whether the revised inflation target will be future-proof depends primarily on whether inflation can be kept close to 2%. Nevertheless, the new framework has many forward-looking elements, including the incorporation of OOH in the inflation indicator, the formal inclusion of financial analysis, the incorporation of climate factors in monetary assessments and in the design of certain instruments, and the revised communication strategy to reach the wider public. The date set for the next review (2025) is a form of insurance for changes if the newly-adopted framework proves to have deficiencies.
1. **INTRODUCTION**

Despite the European Central Bank's (ECB) deployment of a massive monetary policy arsenal, inflation in the euro area has remained relatively low in the past decade. The period from 2014 to 2019 – following the euro area crisis and before the outbreak of the COVID-19 pandemic – was characterised by strengthened growth and job creation, yet annual inflation was 0.9% on average, below the values observed in the United States and the United Kingdom (Table 1). While there was some ambiguity in the ECB's inflation objective (as we discuss in section 2), actual euro area inflation outcome was clearly below that objective.

Table 1: Average annual inflation in 2014-2019

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<th>Headline inflation</th>
<th>Core inflation</th>
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<tr>
<td>Euro area (HICP)</td>
<td>0.9 %</td>
<td>1.0 %</td>
</tr>
<tr>
<td>United States (CPI)</td>
<td>1.6 %</td>
<td>2.0 %</td>
</tr>
<tr>
<td>United Kingdom (CPI)</td>
<td>1.6 %</td>
<td>1.7 %</td>
</tr>
</tbody>
</table>

Source: OECD, Eurostat.

Note: For comparability, we use the consumer price index (CPI) for the United States, even though the Federal Reserve targets the price index of personal consumption expenditures (PCE). See section 3 for a comparison of US CPI and PCE.

Low actual inflation has possibly contributed to a decline in inflation expectations, risking a vicious circle between lower inflation, lower inflation expectations and lower economic activity. Thus, a review of the ECB's monetary policy strategy, which was started in January 2020, was warranted.

Besides low inflation, the ECB's systematic forecasting failure also justified a review of the monetary strategy – a crucial factor in our view, which was not emphasised in the outcome of the strategy review. Figure 1 shows that since 2014, when the ECB started to publish its core inflation forecasts, these forecasts turned out to be systematically biased. Between 2014 and 2019, ECB staff repeatedly predicted that core inflation would start to rise quite substantially, but this did not happen; the rate of core inflation remained stuck at close to, and often below, 1%.
Figure 1: ECB staff macroeconomic projections for euro area core inflation (moving 12-month average rate of change)


Note: Actual data is the thick red line (moving 12-month average), while the thin colourful lines show the ECB forecasts made in each quarter. ECB forecasts are available for annual values. That is why we use the 12-month average rate of change for the actual data. Such moving average data is (practically) equal the annual average in December of each year. In the chart the end observation (December of various years) of each forecast curve corresponds to the annual average forecast numbers published by the ECB. We have linearly interpolated the annual average forecast data and the data in the month of the date of the forecast. Note that the actual data for the month when the forecast is made is not yet known at the time of the forecast, given data publication delays.

Possible explanations for the forecasting failure could include unexpectedly fast expansion of the labour force, overestimation of the non-accelerating wage rate of unemployment (NAWRU), underestimation of labour market slack, and overestimation of the relationship between excess unemployment and wage and price growth (i.e. the Phillips curve relationship). Such estimation errors would be unfortunate by themselves, and they had to be persistent to explain systematic forecast errors.

In Darvas (2018), we found that market participants might disregard forward guidance after large systematic forecast errors, as shown by the systematic interest rate forecast errors made by the Sveriges Riksbank. Forward guidance is also an important ECB policy tool and might contribute to the bank not reaching its goals when forecast errors are systemic. Thus, at least a review of forecasting models, but also more generally a review of monetary policy strategy, is necessary after a long period of too-low inflation and systematic forecast errors.

Formally, the ECB’s justification for the monetary policy review was significant structural changes in the economy since the previous review in 2003. Changes included a declining equilibrium rate of economic growth, slowing productivity, the ageing population, the legacy of the financial crisis and low interest rates which reduce the scope for central banks to ease monetary policy using conventional instruments.
in the face of adverse cyclical developments¹. The outcome of the review was announced on 8 July 2021, and included, among other elements, the definition of the ECB’s new inflation target: 2% inflation over the medium term, with the target being symmetric². The inflation indicator is expected to be modified at some point in the future by inclusion of costs related to owner-occupied housing (OOH).

The goal of this paper is to clarify the main features of the ECB’s revised inflation target in light of international experiences. To this end, we compare the ECB’s new target with its previous objective and with the new target of the Federal Reserve, which was announced in 2020. We briefly analyse the challenges related to, and implications of, the inclusion of the costs related to owner-occupied housing in the inflation indicator. Finally, we offer some concluding remarks on whether the new ECB monetary policy framework is future-proof.

¹ ECB Press Release: ECB launches review of its monetary policy strategy.
² ECB Press Release: The ECB’s monetary policy strategy statement.
2. THE ECB’S INFLATION OBJECTIVES

2.1. The previous inflation objective

The ECB’s previous inflation objective consisted of a quantitative definition of price stability, adopted in 1998:

“Price stability is defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2 %.”

and a clarification issued in 2003:

“The Governing Council clarified in 2003 that in the pursuit of price stability it aims to maintain inflation rates below, but close to, 2 % over the medium term.”

According to ECB (2021b), the 1998 definition was maintained for reputational reasons in 2003, as then-ECB President Wim Duisenberg said at a press seminar that changing it would have created “a big credibility problem”. The ECB’s inflation objective was unique among central banks, as it included a numerical range (inflation below 2 % implies the range of 0.1 %-1.9 %) and a non-precisely defined focal point (below, but close to, 2 %). Other central banks typically adopted a well-defined numerical target, which gives a clearer understanding of the objective of the central bank.

The ECB’s unique inflation objective has been the subject of debates and controversies since the 2003 clarification was issued. A particularly important issue was whether this objective was symmetric or asymmetric. Perceived asymmetry could have itself introduced a downward inflation bias. This is because as inflation nears 2 %, the probability of overshooting 2 % becomes greater, which can lead to a forceful monetary policy reaction. But no such mechanism would be triggered for downside deviations. This could have implied that, even if the actual inflation aim was, say, 1.9 %, the likelihood of positive deviations from it was smaller (because of forceful monetary policy actions) than the likelihood of negative deviations from it (because of less forceful monetary policy actions). This in turn could have resulted in an inflation rate of less than 1.9 % on average, influencing inflation expectations. As ECB (2021b) summarised, the academic literature achieved mixed results on the empirical measurement of whether the earlier inflation objective was symmetric or not. Using a text-mining technique to analyse the introductory statements at ECB press conferences, Paloviita et al. (2020) concluded that the policy response to inflation above the target was stronger than the policy response to inflation below the target. Rostagno et al. (2019) could not distinguish between an asymmetric reaction around 2 % and a symmetric reaction around 1.6 %, and Maih et al. (2021) concluded that the ECB behaviour was asymmetric before 2014, but became more symmetric thereafter.

Thus, the perceived asymmetry might have contributed to a downward drift in long-term inflation expectations. Nevertheless, longer-term inflationary expectations (measured as the expected five-year average inflation rate five years from now) remained well-anchored until the mid-2010s, and fell below 2 % in 2014 (Figure 2, Panel B), which is just the opposite of what one would have expected from the above-mentioned findings of Maih et al. (2021). The downward drift continued after 2014, reaching a low point of below but close to 1 % in late 2019, just before the launch of the ECB’s monetary strategy review. Therefore, perceived asymmetry, by itself, cannot explain the downward drift of actual inflation and inflation expectations since 2014, because long-term inflation expectations were well anchored from 2003 to 2014 when the same (asymmetric) inflation objective was in place. We cannot exclude the hypothesis that actual inflation developments influenced even long-term inflation expectations, while low actual inflation from 2014 to 2019 could have been the outcome of weak demand during the recovery from the euro area crisis, and larger negative output gaps than what were estimated.
2.2. The new ECB monetary policy framework and inflation target

The outcome of the ECB Strategy Review was announced on 8 July 2021 by ECB President Christine Lagarde, concluding a process that had been ongoing for around one and a half years, after being postponed because of the pandemic crisis.

Among the various changes announced by the ECB Governing Council, the quantitative definition of price stability – the ECB’s primary objective – was one:

"The Governing Council considers that price stability is best maintained by aiming for two per cent inflation over the medium term. The Governing Council's commitment to this target is symmetric. Symmetry means that the Governing Council considers negative and positive deviations from this target as equally undesirable."

President Lagarde made clear that symmetry does not mean average inflation targeting, which was the strategy the Federal Reserve System recently decided to pursue, as the outcome of their strategy review announced in August 2020. In addition, “especially forceful or persistent monetary policy measures” are to be expected if the economy moves closer to its effective lower bound, which could lead to periods in which inflation overshoots the target.

The medium-term remains the assessment horizon preferred for taking monetary policy decisions aimed at maintaining price stability. This time horizon allows the central bank to analyse the transmission of its monetary policy to the economy and ultimately to inflation rates, while tolerating short-term deviations from the target. The key ECB policy rates remain the main monetary policy instrument to achieve the primary objective, but the set of tools available to maintain a 2% inflation rate is not limited to that. The so-called "non-conventional" instruments – forward guidance, asset purchases and longer-term refinancing operations – are options available to the ECB to deploy, especially in view of the effective lower bound on interest rates.

The inflation indicator to measure the achievement of the target will be augmented:

"The Governing Council confirms that the Harmonised Index of Consumer Prices (HICP) remains the appropriate price measure for assessing the achievement of the
The ECB’s Revised Inflation Target

Price stability objective. However, the Governing Council recognises that the inclusion of the costs related to owner-occupied housing in the HICP would better represent the inflation rate that is relevant for households."

We analyse the significance and implications of this change in the next section.

Another change to the framework used as a foundation for monetary policy decisions is the explicit inclusion of a financial component. Financial analysis has already been included in ECB assessments due to the recognition of the price stability implications of financial instability, and there was even the creation of the European Systemic Risk Board in 2010, in which the ECB plays a dominant role. The ECB was also tasked with supervising euro area banks and has played a role in micro-prudential policies since 2013 in the EU’s Banking Union. Nevertheless, the formal pillars supporting ECB monetary policy decision-making were since 1998 the economic analysis and the monetary analysis. These have now been broadened to economic analysis and the monetary and financial analysis.

Moreover, the newly announced revision of the ECB strategy touched upon a topic which has been at the centre of discussions in the past months: climate change. The Governing Council concluded that climate change has consequences for price stability and has delineated a plan to integrate climate change into its monetary policy framework. It was acknowledged that both the impact of the ongoing changes in climatic conditions and the current transition towards a greener economy have implications for the economy and affect key macroeconomic indicators, among them inflation and interest rates. As part of the ECB action plan to incorporate climate considerations, disclosure requirements, risk assessments, corporate sector asset purchases and the collateral framework might be tilted towards achievement of climate objectives. Macroeconomic modelling is expected to assess the implications of climate change.

An important question is to what degree these changes can be considered a novelty. While a new review following the 2003 one was definitely worthwhile, nobody expected that the ECB would completely change its monetary policy framework. Several useful analyses were prepared for the review, which themselves help in better understanding the challenges the ECB faces. Nonetheless, the changes to the framework might not be very major. A clear definition of the inflation target is certainly a welcome change, though some observers argued that in practice, the ECB was already aiming for 2% and thus the new inflation target reflects just a change of wording. Incorporation of costs related to owner-occupied housing is again a welcomed decision, which will have some impact on the achievement of the price stability mandate (see section 3). Beyond the primary role of interest rates as a monetary policy tool, the toolkit has in recent years included forward guidance, asset purchases and longer-term refinancing operations. These will continue to be used. Financial stability concerns were already assessed by the ECB, so the inclusion of financial stability among the pillars is a formality. The incorporation of climate change will likely be an evolving issue, and its impact on both climate objectives and the conduct of monetary policy is unclear at the moment.

2.3. Comparing central bank inflation targets

Safeguarding price stability is the main concern of central banks around the world. Several central banks have adopted versions of inflation targeting since the early 1990s. The numerical target is 2% annual inflation for many advanced economies’ central banks, including the United States, United Kingdom, Japan and (since July 2021) the euro area (Table 2).

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2 ECB Press Release: [ECB presents action plan to include climate change considerations in its monetary policy strategy](https://www.ecb.europa.eu).
Beyond the common 2% goal, there are differences. In particular, the Federal Reserve decided in August 2020 for average inflation targeting:

"**In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.**"

In contrast, the ECB has not decided for such a regime, but in essence the ECB’s new inflation target is the same as Fed’s previous inflation target. It is therefore important to understand the reasons for the different choices of the Fed and the ECB.

The main purpose of the Fed’s introduction of average inflation targeting is to anchor expectations at 2%. As the Fed’s statement argues:

"**Inflation averaging less than 2 percent over time can lead to an unwelcome fall in longer-term inflation expectations, which in turn can pull actual inflation lower, resulting in an adverse cycle of lower inflation and inflation expectations. With lower expected inflation, the nominal level of interest rates will be lower too, leaving less room for the FOMC to cut interest rates when needed to support the economy in a downturn.**"

Thus, the primary aim of the average inflation targeting regime is to anchor longer-run inflation expectations at 2%. As Federal Reserve Chair Jerome H. Powell explained⁴:

"In seeking to achieve inflation that averages 2 percent over time, we are not tying ourselves to a particular mathematical formula that defines the average. Thus, our approach could be viewed as a flexible form of average inflation targeting. Our decisions about appropriate monetary policy will continue to reflect a broad array of considerations and will not be dictated by any formula."

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Table 2: Comparison of inflation targets and indicators of major central banks

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<tbody>
<tr>
<td>Numerical target</td>
<td>2 %</td>
<td>2 %</td>
<td>2 % (set by the government)</td>
<td>2 %</td>
</tr>
<tr>
<td>Type of targeting</td>
<td>Symmetry</td>
<td>Averaging</td>
<td>Symmetry with bands (+/- 1 %)</td>
<td>No explicit reference to symmetry</td>
</tr>
<tr>
<td>Time horizon</td>
<td>Medium term</td>
<td>Longer term</td>
<td>Earliest possible time</td>
<td>Earliest possible time</td>
</tr>
<tr>
<td>Main measure</td>
<td>Harmonized Index of Consumer Prices (HICP)</td>
<td>Personal Consumption Expenditures Price Index (PCEPI)</td>
<td>Consumer Price Index (CPI)</td>
<td>Consumer Price Index (CPI)</td>
</tr>
<tr>
<td>Inflation measure</td>
<td>In the future</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Concept for measuring inflation</td>
<td>Cost of goods index</td>
<td>Cost of living index</td>
<td>Cost of goods index</td>
<td>Cost of goods index</td>
</tr>
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Note: The abbreviations in the last two columns of the table should be read as Bank of England (BoE) and Bank of Japan (BoJ).

The ECB’s official statement described the new monetary policy framework and, understandably, did not set out reasons for not adopting something else, such as average inflation targeting. Yet ECB (2021b), a report that reflects the views of ECB staff, compared alternative monetary policy frameworks using various economic models. The report concluded that average inflation targeting, as well as other similar strategies including price-level targeting and nominal GDP targeting, are effective tools to reduce negative biases in inflation and economic activity, and also to reduce macro volatility, but only if three important conditions are met: (1) the strategy is credible and well understood by the private sector, (2) private sector expectations are forward-looking and stable, and (3) the economic behaviour of the private sector is consistent. When these conditions are not met, average inflation targeting brings fewer benefits and is not superior to simple inflation targeting. Nevertheless, the report also noted that some findings are sensitive to the modelling framework, suggesting that results are not that clear cut, and the systematic inflation forecast errors of the past decade suggest that the results of modelling should be taken cautiously.

5 The full disclaimer is the following: “This paper constitutes staff input into the Governing Council’s deliberation in the context of the ECB’s monetary policy strategy review. This paper should not be reported as representing the views of the Eurosystem. The views expressed are those of the authors and do not necessarily reflect those of the Eurosystem.”
3. **THE ROLE OF FINANCIAL STABILITY IN THE MEDIUM-TERM ORIENTATION OF MONETARY POLICY DECISIONS**

One of the changes that has perhaps received less attention in the new ECB monetary policy strategy is the expanded framework that now, in addition to the economic and monetary analysis, includes a financial component. The formal acknowledgement of the importance of financial considerations by the ECB is no surprise, given the efforts made since the global financial crisis to put in place macro and micro-prudential mechanisms to support financial stability. However, the implications that this financial component may have for the time horizon considered in monetary policy decision-making should be carefully managed and understood.

In the 2003 Strategy Review, the medium-term horizon for maintaining price stability was justified on that basis that it would allow for sufficient time for monetary policy to transmit to the economy and that it would allow for the ECB to adapt its reactions to different types of shocks, whether from the supply or demand side. The 2021 strategy review maintains the medium-term horizon but adds an extra layer to the reasoning behind the choice of this time horizon. ECB President Lagarde on 8 July said:

"The Governing Council confirms the medium-term orientation of its monetary policy strategy. [...] The flexibility of the medium-term orientation takes into account that the appropriate monetary policy response to a deviation of inflation from the target is context-specific and depends on the origin, magnitude and persistence of the deviation. It also allows the Governing Council in its monetary policy decisions to cater for other considerations relevant to the pursuit of price stability."

The considerations that the Governing Council deems relevant for achieving price stability are not explicitly indicated, leaving room for discretion. No guidelines have been given about the factors that could influence the length of the time horizon. This discretionary component means that monetary policy decisions could have an additional element of uncertainty, which might adversely influence inflation expectations and make accountability more difficult.

Given the addition of financial analysis to the ECB framework, one could suppose that one of these "considerations" is financial stability. A background paper prepared for the strategy review (ECB, 2021c) investigated precisely the relationship between the medium-term orientation and financial stability considerations. The paper highlighted that there are some challenges for implementation, starting with the lack of a clear measure for financial imbalances, as exists, for instance, for the quantification of price stability. Also, the fact that financial cycles tend to be much longer than business cycles poses difficulties in terms of pursuing a medium-term monetary policy that addresses financial stability concerns. For instance, if in order to ensure financial stability, inflation has to be kept low and below target for too long, there could be a risk of adverse side-effects and de-anchoring of inflation expectations.

This risk materialised in Sweden after the global financial and economic crisis, when the Riksbank used the main monetary policy tool, the interest rate, to address some financial stability issues, which led to high costs in terms of economic activity and a major undershooting of its inflation target, as highlighted by Svensson (2019). Faced with a rising household debt-to-income ratio, the Riksbank increased its

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policy rate from 0.25% in July 2010 to 2% in July 2011. As a result, inflation fell quickly and was around zero for more than two years, well below the 2 percent target, ultimately forcing the central bank to reverse its actions. Moreover, although the Riksbank initially aimed to ward off the threat to financial stability from household over-indebtedness, the household debt-to-income ratio was not affected by the 2010-11 policy of tightening. In fact, the ratio continued to increase in real terms because of the very low or even negative inflation rates.

Additionally, the lack of a synchronised financial cycle across euro area countries makes it harder for an area-wide response to deliver the necessary stabilising effect. More targeted responses from the national competent authorities, including micro- and macroprudential supervision, fiscal policy and regulation of bubble-prone sectors (such as construction), seem to be the preferred and adequate way to respond to such financial imbalances, as argued by Claeys and Darvas (2015).

Nevertheless, financial stability concerns should be included in monetary policy assessments for four main reasons (ECB, 2021c). First, financial instability can have an adverse impact on price stability. For example, the consequences of financial crises for price stability were evident after the global financial crisis: financial instability resulted in economic fluctuations, which in turn led to inflation-rate fluctuations. Second, coordinated macroprudential and monetary policies could complement and strengthen each other, in particular when business and financial cycles are aligned. Third, assessing the effects that monetary policy can have on financial stability (or instability) is important so that efforts can be made to reduce some of the side effects. An example is the implementation of the two-tier system in an attempt to mitigate the costs for banks of the negative interest rate policy. Fourth, monetary policy can be important to support macroprudential policy, especially when the macroprudential framework is still young and not fully developed.

Fed staff also investigated the financial stability component in their preparatory work leading to the revision of the Fed’s monetary policy strategy in 2020. The paper specifically addressing this topic (Goldberg et al, 2020) identified arguments for and against the inclusion of financial stability considerations in monetary policy. It concluded that macroprudential and supervision policies are better positioned than monetary policy to address financial vulnerabilities. Also, the use of separate tools for monetary and financial stability policies would avoid any potential conflicts that could arise when including one more goal – financial stability – in a mandate that is already focusing on achieving two objectives: price stability and maximum employment (which make up the Fed’s dual mandate). However, Goldberg et al (2020) recognised that monetary policy intervention may be necessary to complement macroprudential tools. For instance, monetary policy might reach a broader set of agents than macroprudential policy, and thereby the former can support the latter. Moreover, monetary policy can be readily implemented to foster financial stability, while the other set of tools requires time and coordination before being ready to deploy.

To sum up, there are synergies between monetary and financial stability policies, but the toolkit should be different. The priority should be to define guidelines on how to include financial stability concerns in ECB monetary policy decision-making, and to what extent the medium-term horizon for price stability could be influenced by financial considerations, which currently remains unclear. The lack of clarity makes ensuring accountability of the ECB more difficult. For now, it seems that factoring in financial stability will involve a careful monitoring of warning signals in the financial sector, and hence

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8 Merler (2015) concluded that before the global financial and economic crisis, monetary policy unification and interest rate convergence resulted in the divergence of euro area countries’ financial cycles. This divergence is deeply rooted in the financial integration spurred by currency union and strongly correlated with intra-euro area capital flows.
the formal inclusion of financial stability concerns in price stability decisions could evolve in a learning-by-doing process.
4. THE AUGMENTED INFLATION INDICATOR

The second set of the November 2021 Monetary Dialogue Papers deal with the issue of owner-occupied housing and its inclusion in the HICP in great detail. Here we will briefly summarise the issue and quantify the possible impacts of such a change on the inflation indicator which is subject to the inflation target. This change in the indicator can have an impact on the numerical inflation target (i.e. the new 2% inflation target based on the new indicator could prove to result in a lower inflation target than the previous “close to but below 2%” inflation objective, when considering comparable inflation indicators). Moreover, the new inflation indicator could involve an asset price component, thereby blurring the lines between financial stability policy and monetary policy.

While the HICP remains the selected indicator to measure inflationary developments⁹, the ECB Governing Council called for the inclusion of the costs related to owner-occupied housing. Given that 66% of euro area households are owner-occupiers¹⁰, neglecting costs related to home ownership is a major deficiency¹¹. At this point, an OOH-augmented HICP indicator is not available, but a multi-year roadmap has been recommended by the Governing Council to compile such a measure¹², with the goal of Eurostat starting to release an official quarterly HICP including OOH costs by 2026, while a monthly index is planned for later. In the meantime, separate OOH indicators will be taken into account as a complement to HICP. OOH costs are included in the indicators considered by the Federal Reserve and the Bank of Japan, but not by the Bank of England (Table 2).

4.1. Options for including owner-occupied housing costs in price indices

The way OOH can be included in a price index also depends on how it is conceptualised, whether the index is designed to capture price changes in a basket of goods and services purchased by households (cost-of-goods index, like Eurostat’s HICP and the US CPI), or is envisioned to measure the cost to households of achieving a certain level of utility (cost-of-living-index, like the US Personal Consumption Expenditure Price Index, PCEPI)¹³. For a particular country, the two indices can deviate, as the example of the United States demonstrates (Figure 3). The deviation partly results from differences in the revision of the weights (more frequent for PCEPI than for CPI), and partly because the PCEPI includes expenses that are not directly incurred by households but that benefit households, such as the contributions of employers to their workers’ health insurance.

On average, CPI grew by 0.4 percentage points per year faster than PCEPI in the United States from 1990 to 2020. This implies that a 2% target for the PCEPI by the Federal Reserve is equivalent to a 2.4% target for the CPI. Since US CPI is comparable to the euro area HICP, the gap between the two indicators implies the US inflation target is somewhat higher than the euro area inflation target, when considering comparable indicators.

In the United States, the “rental equivalence” approach is used when including OOH costs both in PCEPI (which is a cost-of-living-index) and the CPI (which is a cost-of-goods-index). This means estimating

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⁹ An important reason for this choice is that the HICP is considered to have four essential characteristics: comparability, reliability, timeliness and credibility.

¹⁰ End of 2019 figures retrieved from Eurostat (online data code: ILC_LVHO02).

¹¹ Certain housing-related costs have been included in the HICP under the category “Housing, water, electricity, gas and other fuels”, with an average weight of 16% in 2001-2020, but not specific costs related to owner-occupied housing.

¹² More details on the recommended roadmap can be found in Chapter 3 of the note accompanying the ECB Strategy Review documentation. Available at: https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_overview.en.html.

¹³ More on this can be found in Chapter 2 of the Methodological Manual for the HICP (Eurostat, 2018).
what the market rent would be for an equivalent dwelling in the same area (also called owners’ equivalent rent).

Figure 3: Evolution of the Consumer Price Index (CPI) and the Personal Consumption Expenditure Price Index (PCEPI) for the United States

Source: Federal Reserve Economic Data (FRED).

The rental equivalence approach is also used in Europe in national accounts statistics for the computation of consumption expenditure of households and its price index. ECB (2021a, page 59) notes that "A fairly harmonised approach exists in national accounts. However, this approach is not granular enough to fully capture the changes in housing costs within the different locations in each country". Some euro area countries also use the rental equivalence approach to include OOH in their national CPI (not in the HICP).

A problem of the rental equivalence approach is that it is difficult to apply when rental markets are thin, while the lack of comparability between the rental and owner-occupied housing markets poses further challenges. Moreover, when rental market regulation imposes controls on rental price changes for sitting tenants, the rental price index might not reflect market developments. An advantage is that the implied costs of all households living in their own properties are taken into account.

For the euro area HICP, which is a cost-of-goods-index, the ECB (2021a), reflecting the views of ECB staff, advocates a net acquisition approach, in line with the conceptual basis of the HICP, while calling for further investigation of how to treat the consumption and investment components inherent in house purchasing. According to the acquisition approach, "the purchase of a dwelling is recorded as consumption at the time the transaction takes place, as is done with other durable goods" in the HICP (ECB, 2021a, p51). Hence, this approach disregards the fact that the consumption of the good takes place over time. "Net acquisition" in this context means purchases minus sales of dwellings of the household sector from/to other sectors,
while transactions among household entities are excluded. Thus, a drawback of this approach is that it considers only that small subset of households that purchase a new dwelling from the non-household sector, or build on their own 14.

An even more critical issue is the separation of the investment and consumption purposes of new house purchases, since only the consumption element should be included in HICP. With the purchase and owner-occupation of a dwelling, the household benefits from both: (1) having a place to live, meaning not having to rent a dwelling, even though the dwelling has to be maintained and sometimes renovated, and (2) possible capital gains from ownership, since house prices tend to increase over time. ECB President Christine Lagarde highlighted that only the consumption element should be included in the inflation indicator 15:

“What was decided by the Governing Council was to account for the consumer cost of the owner-occupied house. So, it has nothing to do with the investment cost that an owner incurs; it has to do with the consumer cost that the owner of a house actually incurs. It is that particular portion that we want to take into account in order to respond to the frustration of many of the Europeans that we have consulted, and that reached out to us, that the cost of housing was not properly accounted for in the inflation measurements, as they saw it.”

However, the separation of the consumption and investment components of homeownership is an unresolved issue. The net acquisition approach advocated by ECB staff implicitly assumes that housing-related consumer costs follow the fluctuations of house prices, an assumption which is not justified. On the contrary, house price changes determine the capital gain (or loss) resulting from investing in a house and thus the house price index reflects the results of the investment motive for home ownership. The inclusion of an investment component via house prices would introduce an asset-price component to the inflation measure, which in turn would weaken the role of price stability and increase the role of financial stability in monetary policy. As ECB (2021a) notes, it “might blur the lines between macroprudential and monetary policy and imply some trade-off between having a more representative inflation measure and its informational content for the conduct of monetary policy”16.

Comparing the current measures used by the ECB and the Fed to analyse inflation developments, we see that the share of housing-related costs in US PCEPI is currently higher (20 %) than in the euro area HICP (18 %), but the euro area HICP does not include OOH (Table 3). When it is added, the share of housing-related costs will be most likely be higher in the euro area than in the US. In the US, OOH inflation differs from rental inflation, suggesting that the rental equivalence approach indeed makes adjustments in the calculation of OOH costs. It is interesting to note that the average inflation over 2001-2020 of non-housing items (named “other items” in the last but one line of Table 3) was the same in the euro area and the US, and thus the housing component made the overall US inflation indicator higher 17. In the US, OOH costs grew faster than non-housing related inflation. If this would be the case in the euro area, then the inclusion of OOH costs in the HICP could lead to an upward shift in the HICP inflation figure.

14 Vehicle purchases are treated similarly in the HICP. Vehicles are durable goods, the consumption of which spans through time. However, they are counted in the HICP when the monetary transaction happens. HICP includes only net purchases of new cars and second-hand cars by households from the non-household sector, but does not include sales of used cars within the household sector.

15 See the questions and answers section of the 8 July 2021 ECB press conference. Available at: https://www.ecb.europa.eu/press/pressconf/2021/html/ecb.sp210708--ab68c3bd9d.en.html#qa.

16 See Box 11 of ECB (2021a).

17 A direct comparison between these two indicators should be made with caution given the difference in the computation of the two indicators.
Table 3: Comparison the current housing-related components of euro area HICP and US PCEPI

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<tr>
<td></td>
<td>EA HICP</td>
<td>US PCEPI</td>
<td>EA HICP</td>
</tr>
<tr>
<td>Rentals (tenant-occupied housing)</td>
<td>7.5 %</td>
<td>4 %</td>
<td>1.6</td>
</tr>
<tr>
<td>Owner occupied housing costs</td>
<td>0 %</td>
<td>12 %</td>
<td>-</td>
</tr>
<tr>
<td>Water supply and others</td>
<td>3.1 %</td>
<td>1 %</td>
<td>2.3</td>
</tr>
<tr>
<td>Electricity, gas and others</td>
<td>5.9 %</td>
<td>2 %</td>
<td>3.0</td>
</tr>
<tr>
<td>Dwelling maintenance</td>
<td>1.3 %</td>
<td>0 %</td>
<td>2.3</td>
</tr>
<tr>
<td>Other items</td>
<td>82.3 %</td>
<td>80 %</td>
<td>1.3</td>
</tr>
<tr>
<td>All items</td>
<td>100 %</td>
<td>100 %</td>
<td>1.6</td>
</tr>
</tbody>
</table>


4.2. Currently available European indicators for owner-occupied housing costs

An OOH price index is available in the national accounts dataset using the rental equivalence approach. In addition, since 2014, Eurostat has released an OOH Price Index using the net acquisition approach, on a quarterly basis, with a delay of approximately one quarter in the data. This index is not yet suitable for inclusion in the HICP, partly because its composition is very different in different euro area countries. According to the roadmap presented by the ECB, it is not possible at this point to foresee a date for monthly releases of an OOH-augmented HICP to be used as the main index for monetary policy purposes, but the roadmap foresees that a quarterly OOH-augmented HICP will be published by Eurostat from 2026. In the case of the US PCEPI, which includes OOH costs using a rental equivalence approach, the release of this data is done on a monthly basis18.

The OOH Price Index computed by the Eurostat follows a net acquisition approach and has two components: an acquisition component (accounting for around 80 % for the euro area) and an ownership component (around 20 %). The first contains the acquisition of dwellings from the non-household sector and self-building of dwellings, plus related costs, while the second includes expenditures related to owning and maintaining the dwelling19.

Figure 4 clearly shows the different behaviour of dwelling acquisition price indices (first three in legend) and rental price indices (last three in legend) for the euro area. Rental price inflation tends to be relatively stable overtime, in contrast with indices capturing house prices, which fluctuate more visibly.

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18 For more details, see US Bureau of Economic Analysis (2020).
19 Note that the repair and maintenance included in the OOH and what is already included in the HICP under the component "Maintenance and repair of the dwelling" refer to different non-overlapping costs.
This difference is particularly relevant considering that the inclusion of price developments of one or the other in the HICP depends on the choice of approach to measure OOH costs.

Figure 4: Evolution of various housing-related price indices for the euro area (% change per year)

Source: Eurostat.

Note: The house price index captures price changes of all kinds of residential property purchased by households (flats, detached houses, terraced houses, etc.), both new and existing. Only market prices are considered, self-build dwellings are excluded. The owner-occupied housing price index measures the price changes of dwellings that were purchased for own-use and the cost of all goods and services that households purchase in their role as owners occupiers of dwellings. As this index is based on the net acquisitions approach, only purchased dwellings that are new to the household sector are covered, while transactions between households are excluded. The price index of dwellings from the national accounts is obtained from the section ‘Gross fixed capital formation by AN_F6 asset type’ [nama_10_an6]. The imputed and actual rentals for housing from the national accounts are obtained from the section ‘Final consumption expenditure of households by consumption purpose (COICOP 3 digit)’ [nama_10_co3_p3].

We calculate the impact of adding two alternative measures of owner-occupied housing costs to the HICP. The first is the owner-occupied housing price index (based on the net acquisition approach), while the second is the price index of imputed rents for housing from the national accounts. According to national accounts, OOH costs are estimated to represent around 13% of households’ final consumption expenditure in the euro area. This is fairly similar to the 12% weight verified for the US CPE, as shown in Table 3, even though this share is likely to be smaller when introduced to the HICP. Assuming a 13% weight of OOH costs in the HICP, we derive two OOH-augmented HICP versions. When including the owner-occupied housing price index, the augmented HICP would be on average 0.08 percentage points higher than the actual HICP over the period from 2011 to 2020, and 0.23 percentage points higher over the period from 2016 to 2020 (Figure 5). When including the price index of imputed rents for housing from the national accounts, the augmented HICP would be, on average, practically the same as the existing HICP (just 0.03 percentage points lower in 2011-2019 and 0.02 percentage points higher over the period from 2016 to 2020).

---

20 Figure retrieved from the Eurostat table [nama_10_co3_p3] “Final consumption expenditure of households by consumption purpose (COICOP 3 digit), percentage of total for the item ‘Imputed rentals for housing’. The average share from 2011 to 2019 is 13%.

21 According to ECB (2021a) an OOH component included in the HICP would have a lower weight of around 9% or less.

22 ECB (2021a) showed the results of similar analyses and the results obtained are aligned with our exercise.
points lower in 2016-2019). These results do not come as a surprise given the different evolutions seen in Figure 4 for rents and housing prices.

These findings emphasise the importance of discussing the most adequate approach when quantifying OOH costs. The inclusion of OOH costs in the HICP using the net acquisition approach would have reduced the gap between reported inflation and the ECB’s "below but close to 2%" objective in the past, whereas there wouldn’t be a material difference if the measure had been computed using a rental equivalence approach.

Naturally, a change in the reference inflation indicator used by the ECB in the future will have implications for the quantification of the success in achieving its inflation target, and should therefore be clearly communicated and justified to the general public.

Figure 5: Exercise deriving an OOH-augmented HICP using different approaches (% change per year)

Source: Bruegel calculations based on Eurostat data.
5. IS THE ECB'S NEW MONETARY FRAMEWORK FUTURE-PROOF?

In our view, the success of the new framework will depend primarily on how close inflation stays to 2%. The previous framework also served well until both actual inflation and expected future inflation were close to 2% and questions started to emerge as both actual and expected inflation started to drift downwards. In this regard, the inflation spike of 2021, resulting from renewed demand after the recession and supply bottlenecks brought about by the COVID-19 pandemic, can be an important factor supporting the sustainability of the new monetary framework, since price developments have overshot the 2% target and long-term inflation expectations have also started to move closer to 2% (Figure 2). This started well before the publication of the ECB strategy review results.

Nonetheless the new framework has a number of positive elements which increase the chance they will become lasting features of ECB monetary policy:

- Before 2021, the ECB’s ambiguous inflation aim was unique. The new symmetric 2% target is in line with international practice. A key question is whether the new framework can anchor long-term inflation expectations at 2%, or if a new target, like the Federal Reserve’s average inflation targeting, will need to be introduced later.

- The formal inclusion of financial analysis confirms a crucial existing practice.

- The inclusion of costs of owner-occupied housing will result in an indicator more relevant for households.

- Climate change has implications for price stability and the fight against climate change will likely be a central challenge for policymaking in the decades to come; thus closer monitoring of this issue by central banks is also expected.

- A revised communication strategy which aims at better communication geared towards the wider public is another element which will likely long remain important.

- Finally, setting a date for the next strategy review, 2025, works as insurance against maintaining the framework for too long if new circumstances arise or if the inflation target is not met.
REFERENCES


The ECB's New Definition of Price Stability: Better but Short of Specifics

Charles WYPLISZ
Abstract

The new definition of price stability is a step in the right direction, even though the ECB could have gone further toward the Fed's average inflation targeting. This definition can become most helpful as the central bank navigates new uncertainties. Yet, the review does not deal with some daunting challenges that are already visible. It will need more than a few principles about price stability to deal with such issues as high and rising public debts, financial stability, or climate change.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 15 November 2021.
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<th>Description</th>
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<tr>
<td>APP</td>
<td>Asset purchase programme</td>
</tr>
<tr>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>ESCB</td>
<td>European System of Central Banks</td>
</tr>
<tr>
<td>EP</td>
<td>European Parliament</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>HICP</td>
<td>Harmonised index of consumer prices</td>
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<tr>
<td>PEPP</td>
<td>Pandemic emergency purchase programme</td>
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<td>QE</td>
<td>Quantitative easing</td>
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EXECUTIVE SUMMARY

- **The second strategy review of the European Central Bank (ECB) comes at a crucial juncture.** It follows three historical crises and it precedes a complex situation that could combine resurgent inflation, high public debts and the struggle against climate change.

- **The second review improves on the first review but not much.** Major lessons from the three crises are not fully drawn and the challenges that lie ahead are not well recognised.

- **The new definition of price stability has long been awaited.** It is now symmetric and it allows for temporary overshooting, as needed. It remains vague regarding the margin of tolerance and the time allowed for overshoots.

- **The other long-expected change is the recognition that financial stability is an objective.** However, it is presented as a pathway to the primary objective of price stability. There is no room for a trade-off.

- **The review is silent on the issue of lending in last resort.** Central banks are usually careful not to create a moral hazard by committing to lending in last resort, but they are known to keep the instrument on the ready. In order to have a ready instrument, the ECB must reach an understanding with member governments on procedures and liabilities.

- **A first likely challenge that the ECB could face is higher inflation.** There is no indication in the review of how it would deal with fiscal and financial dominance. The reassertion that price stability is paramount may be the answer.

- **A second potential challenge concerns the end of quantitative easing (QE).** Does the ECB intend to shrink its balance sheet? There is no answer in the strategy review although it is an important issue given the size of public debts.

- **The third challenge is the upcoming struggle against climate change.** The review mentions the need to evaluate the associated risks but does not explain how it will deal with rising public expenditures and further increases in public debts.

- **These challenges imply a rise in uncertainty.** The new definition of price stability creates more room for manoeuvre. This may be a welcome reason for the vagueness of the definition. The increase in uncertainty should be borne primarily by the financial markets.

- **The rise in uncertainty also concerns the accountability process.** Monetary policy could become more uncertain as well, which stands to complicate the central bank’s communication. The European Parliament could conduct its own review of the Monetary Dialogue.
1. **INTRODUCTION**

The strategy review intends to clarify how the European Central Bank (ECB) intends to deliver on price stability, its primary objective. From the start, the formulation of the inflation objective has been criticised for being imprecise, asymmetric and quite likely unachievable as stated. The new formulation is symmetric but even more imprecise, so it will be difficult to assess if it has been achieved.

The previous strategy review was conducted in 2003. Evaluating this review, Lars Svensson (2003) wrote:

“This evaluation can be seen as a response to the strong and almost unanimous criticism of the ECB’s strategy from the ECB’s outside observers and commentators, both academic and nonacademic. […] The ECB has missed an opportunity to thoroughly modernize its strategy, remove the ambiguity, and explicitly and transparently adopt flexible inflation targeting.”

Since then, without any formal review, the ECB has *de facto* adopted the flexible inflation targeting strategy. Almost twenty years later, it could have been hoped that the review would provide clarity and precision, but it is not the case.

In fact, the review can be seen as focused on the near-term challenge. Following three crises (global financial, euro area debt and COVID-19), the ECB is preparing to face a new situation with high public debts, potential inflationary tensions, asset prices reflecting expectations of near-zero interest rates and a multitude of possible structural changes predicted by the impact of the pandemic on trade or individual preferences regarding work, travel, consumption and more. It is entirely possible that the new world will resemble the old world, but uncertainty is much higher than it used to be. Accordingly, the ECB needs to be flexible in both its analyses and its strategy. This is difficult for an institution that used to project an image of steadiness.

This paper describes the conflicting demands put on the ECB. The financial markets and some observers ask for too much reassurance. Monetary economists want to see a carefully-redesigned inflation targeting strategy. Some worry about rising inflation while others are sure that the current surge is strictly temporary. Some are concerned that governments cannot absorb higher interest rates, others fear fiscal dominance. Climate change deepens all these debates. Faced with these demands, the ECB is recoiling, formally changing little and searching for flexibility by increasing ambiguity.

The paper starts with a brief review of the momentous events over the last decade. The euro area was shaken by three crises that were not supposed to happen. Several missteps occurred, which would suggest that the strategic review had many lessons to digest while also preparing the future. This overview opens the way to examining the strategy review in Section 3. The new definition of price stability finally recognises that the previous one was ill-conceived. It also provides some much needed flexibility in view of the forthcoming challenges. However, old sacred cows (the two-pillar strategy) survive while several important issues that will dominate the next few years are either ignored or imprecisely dealt with. Section 4 describes the challenges that lie ahead and what they mean for the ECB. The next sections briefly examine how the mounting level of uncertainty affects the ECB strategy and accountability. The last section offers conclusions.
2. **THREE CRISES LATER**

2.1. **Brief overview of the crises**

The previous strategic review was mooted during the period of "great moderation", as it was called by Ben Bernanke, the former chair of the Fed. Growth and inflation were within the norms of the time and central banks were expected to keep it that way. These were easy times, when defining a monetary policy strategy was an exercise in fine tuning the inflation targeting strategy that had delivered the great moderation. Much excitement greeted details of no interest to non-specialists. Then three crises of historical proportions hit. In the event, the ECB’s response has been marked by an abundance of policy mistakes because the review had not prepared the bank for the totally unexpected events that would follow.

The financial crisis has forced central banks to accept that their mandate could not just be price stability. The need to also aim at financial stability surged as an urgent priority. In 2008, the ECB initially responded quickly by providing the financial markets with liquidity but then moved with much more caution than other central banks. As can be seen from the left-hand chart in Figure 1, the ECB did not really adopt the quantitative easing (QE) instrument, which it calls asset purchases programmes, until 2011, and on a much reduced scale compared to other major central banks. Furthermore, the right-hand chart indicates that it was also slow in lowering its interest rate, even mistakenly raising it in 2011. This low reactivity partly explains the next shock, the debt crisis that nearly destroyed the euro.

Figure 1: Non-standard policies

Unfortunately, the ECB’s reaction to the debt crisis was equally slow and subdued. It took more than two years after the new crisis erupted until President Draghi uttered the historical "whatever it takes" statement. The statement came late, since the debt crisis had already spread from Greece to several countries. Arguably, had it been made at the outset, there would have no contagion beyond Greece and, probably no crisis.

In contrast, the response to the next crisis, created by the COVID-19 pandemic, has been both forceful and prompt. While it could not further cut the interest rate, which was at its effective lower bound, the ECB promptly expanded its bond purchases. Importantly, its pandemic emergency purchase programme (PEPP) amounts to a major innovation as it allows the ECB to buy national public bonds of the most exposed countries over and beyond the usual key that corresponds to country shares of the

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1 This point is developed in Eichengreen and Wyplosz (2016).
ECB capital. Indeed, from the point view of financial stability, it makes no sense to buy a lot of German bonds and just few Portuguese bonds. As a result of this move, there has been no threat of a renewed debt crisis and, more broadly, of financial instability, which would have been disastrous in the midst of the pandemic.

2.2. Implications of the crisis for the strategy review

This brief overview of the crises shows that the ECB has found it difficult to move away from its focus on price stability even as the global financial crisis and the debt crisis presented the euro area with historical threats to financial stability and, more broadly, to the European economy. Somewhat reassuringly, by the time of the pandemic, the ECB had moved away from its narrow concerns. These events matter for any assessment of the new strategy review, for five reasons.

First, the primary focus on price stability is explicitly stated in the Treaty that lays down the mandate of the ECB. This is probably why the bank finds it necessary to frame any decision, big or small, as justified "within the mandate". This litany may be seen as an indication that bold changes are impossible or, at best, that they must be limited in scope and carefully scripted. This has long led to small steps and therefore to slow moves, even in the teeth of a major crisis, and when reviewing the strategy in 2003.

Second, there is always room for interpreting any mandate. The evolution of monetary policy over the three crises has shown that "within the mandate" is not as highly constraining as sometimes asserted. In addition, the Treaty leaves the ECB free to define price stability, which indeed is one outcome of the second strategy review.

Third, because it may be interpreted in a wide variety of ways, adherence to the mandate is both of mostly symbolic importance and a source of high-level debates, both within and outside the ECB. Such debates can become very theoretical and detached from the practical issues that the central bank faces. The interventions of the German Constitutional Court are an example of such debates, which restrict sensible actions, including the adoption of a new review.

Fourth, the unique feature of the European monetary union is that it includes many independent states, each with its own history and idiosyncrasies. This opens up the possibility of disagreements along national lines, which have been frequently aired. These disagreements are bound to emerge when producing a formal document like the strategy review. Disagreements also exist in other major central banks, but they are not based on alleged national interests.

Fifth, crises offer opportunities to learn from successes and mistakes. However, evaluating the past requires a practical focus. Otherwise, it may only harden preconceptions along doctrinal and national lines. It may be reassuring that the pandemic crisis was well managed, but was it because one group dominated another, maybe against concessions on the strategic review then underway?

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2 It is fair to note that in 2008 most central banks were confident that inflation targeting was the definitive strategy, which required at most some fine tuning. Financial and debt crises were not considered issues relevant to the advanced economies.
3. THE STRATEGIC REVIEW

3.1. The new definition of price stability

The main step forward is to replace the previous inflation goal of "below but close to 2 %" with a symmetric 2 % objective to be achieved in the medium run. This change had been very widely advocated ever since the ECB offered its definition of price stability. Critics complained about the asymmetric ("below 2 %") and ambiguous ("close to 2 %") definition. The ECB argued that it was merely a definition, not an objective, and therefore it did not have to be an operational guide. It was never clear how a central bank tasked with price stability could have another objective than its definition of price stability.

Unsurprisingly, the outcome reflects the ambiguity of the definition and its impact. Figure 2 presents the distribution of monthly inflation rates since January 1999, measured over the last 12 months. The most frequently observed range is between 1.9 % and 2.1 %, which is symmetric around 2 %. However, the distribution is highly asymmetric. About 40 % of the rates are less than 1.5 %.

Figure 2: Frequency distribution of monthly inflation rates – January 1999-September 2021 (price increases over previous 12 months)

Source: ECB.
The second change in strategy is probably richer of consequences. The new strategy “implies a transitory period in which inflation is moderately above target”. The ECB now accepts to temporarily overshoot the 2% target. This statement is a welcome step as it should help facing the coming challenges presented below. However, the statement is vague. It does not specify any limit to inflation nor how long an overshoot will be acceptable.

Without saying so, the ECB almost follows the US Federal Reserve's own new average inflation targeting (AIT) strategy. Almost, though. While the Fed wants to be judged on average inflation over an unstated duration – for which it has been rightly criticised – the ECB aims all the time at 2%, only accepting temporary deviations. This may seem like neat picking, but it is not. The merit of the Fed's strategy is to get close to price level targeting. If the Fed is successful, you can anticipate price levels over the long run to move along a 2% growth trend, which provides a high degree of precision, because bygones are not meant to be bygones. In the case of the ECB, the strategy is much less precise, creating a significantly larger level of long-run uncertainty. This uncertainty is not only affecting firms and possibly households, it also is likely to impact long-term interest rates.

3.2. Financial stability

The ECB now takes responsibility for financial stability, a crucial missing element of the previous review (and of the mandate). But its justification, that “financial stability is a precondition for price stability” is embarrassing. It shows that a key lesson from the crises is deliberately being ignored. In recent years, along with major central banks, the ECB has adopted the nonstandard quantitative easing instrument, expanding its balance sheet to stabilise the financial markets. But it has always insisted that its aim was to bring inflation up to its definition of price stability. This formulation perhaps explains the limited use of QE displayed in Figure 1. Evidence that QE has a powerful effect on financial markets but no discernible macroeconomic (on growth and inflation) effect notwithstanding, the ECB seems unwilling to recognise the true purpose of its own actions. This is not innocuous.

As explained in Wyplosz (2021), this view stands to hamper the need to normalise its policies in the coming years. If QE is a powerful macroeconomic instrument, the ECB will need to wait until inflation is back to its 2% objective to tamper and, quite possibly, to shrink its balance sheet. As Figure 1 shows, it missed that opportunity before the pandemic crisis. It was left with no room to maneuver when it became needed.

Furthermore, the statement rules out any trade-off between price and financial stability. On the one hand, the review opens up the door to such a trade-off through the redefined medium term orientation and the insistence on proportionality and side effects. On the other hand, financial stability is systematically presented as secondary to price stability. In the end, the review does not spell out a clear strategy on a most important issue. What will the ECB do in the event that financial stability is under threat while inflation is above 2%? It would be a major mistake to refrain from adopting policies that stand to stabilise the financial markets, and let a financial crisis erupt, simply because the justification articulated in the strategic review does not warrant expanding the money supply in these circumstances.

3.3. Banking system stability

The ECB is now in charge of bank supervision and shares responsibility for bank resolution with national authorities, leaving the euro area with a cumbersome process to be activated in case of emergency. It might be argued that clarifying the framework lies outside the strategy review since it is not for the ECB alone to decide. However, the review could acknowledge the importance of the issue.
In recent years, macroprudential policies have become an increasingly important part of the overall monetary policy framework. In the euro area, this instrument remains in the hands of national central banks. Yet, financial stability is unlikely to be preserved in the monetary union if one country faces acute instability. As with lending in last resort and bank resolution, potential transfers among member countries complicate the search for an agreement. The ECB could, and should, have an important say in how these policies are designed and implemented at the national level. Various possibilities exist, none is mentioned.

**3.4. Lending in last resort**

Whether they like it or not, central banks must be prepared to act as lenders in last resort to governments and banks. They usually refrain from creating the impression that they will automatically use this instrument in case of need, because they do not want to create the moral hazard of encouraging governments and banks to adopt risky policies in the expectations that they will be bailed out if they face acute hardship. The ECB’s reluctance is no exception, but the absence of any reference to this responsibility in the strategic review is worrisome.

During the global financial and public debt crises, it did end up carrying out this responsibility, but late and with all sorts of potentially harmful safeguards. This issue is particularly controversial in the euro area because it includes different countries. Depending on how its structured, lending in last resort may lead to significant transfers among member countries. This is one additional reason for the ECB to undertake preparations. It needs to develop instruments that minimise the moral hazard and avoid losses. It also must negotiate with member country governments how eventual losses can be apportioned. Such preparations are unlikely if the ECB does not accept this responsibility.

**3.5. The two pillars**

The logic of the two pillars of analysis, economic and monetary, has been doubtful from the start. The strategic review makes progress in two directions. First, it explicitly abandons the notion of cross-checking, which really meant that each pillar on its own provides information on the variables of interest to the central bank. Cross-checking really reflected long-resolved debates pitting inflation targeting against monetary aggregate targeting. The new strategy now accepts the notion of general equilibrium, which relies on an integrated framework of analysis.

The second progress is summarised in the redenomination of the monetary pillar into "monetary and financial analysis". This change acknowledges that the path from money policy to the economy (including growth, inflation and employment) transits in an important way through the financial markets. This may seem obvious, but it was not in the 2003 review, which relied on primitive and mechanical links.

Still, once it is agreed that both pillars must be integrated into a general equilibrium framework of analysis, there is no need to keep them explicitly apart. It is surprising that this relic of a distant past has survived in the review. It may reflect the ECB’s internal organisation into specific departments. If that is the case, it would seem preferable to adjust the organisation structure to the task. Alternatively, it may reflect lingering disagreements within the Governing Council or among the staff. In the end, the survival of the two pillars is most likely inconsequential in view of the adoption of the general equilibrium approach.
4. THE NEW CHALLENGES

Navigating three major crises in a few years constitutes a major, unprecedented challenge. Over the two first crises, most governments have been relatively subdued in their macroeconomic interventions, leaving the central banks as the first, and often only, line of defence. The situation has been reversed during the pandemic because the situation unambiguously required fiscal policy actions – sanitary, public support – that lie far from the competencies of central banks. Although they have continued to forcefully deploy their nonstandard tools, central banks have been more efficient in eliminating the risks of financial instability. Assuming that COVID-19 becomes "only" a normal sickness, the return to normality will bring the central banks to the fore. They will face a set of unprecedented challenges. A natural question is whether the strategy review is well-adapted to this new situation.

4.1. Inflation and public debts

In many countries, public debts now reach levels (in percentage of GDP) unseen outside postwar times. Historically, high debts have been reduced by long-lasting primary budget surpluses, or defaults, or inflation. Inflation is often presented as the easy way out (Aizenman and Marion, 2009; Blanchard et al., 2010). This would only be possible if the ECB were to change its focus on, or its definition of price stability.

The strategy review may be interpreted as a signal in this direction. The symmetry of the new definition and the comment that above target inflation can be accepted for a while could indicate a willingness to let inflation rise. These changes can even indicate that the ECB accepts *ex ante* to provide fiscal space to member governments as the euro area exits a very troubled decade, both economically and politically. In that view, fiscal dominance is back.

Assuming that this is indeed the ECB’s intention, we need to examine whether inflation can work as intended. Reviewing two centuries of high debts, Eichengreen et al. (2019) observe that inflation was used to reduce debts in only two periods. After WW1, a few countries (including Hungary, France and Germany) eliminated their debts through inflation, but this was inflation of the hyperinflation variety (not quite in France), which is not acceptable now, for good reasons. After WW2, moderate inflation was indeed the instrument of choice. However, this was only possible because of financial repression through heavy-handed regulations – allowing governments to control interest rates directly or indirectly – alongside capital controls. In addition, public debts were mostly privately held.

This is not the current situation. Although nothing is impossible, it is hard to imagine that financial repression is an option that governments will be willing to contemplate, even if they have high debts. This is largely precluded in the euro area or, at least, it would require unanimity. Lower-debt member countries are most certain to veto such moves, including imposing capital controls.

In recent weeks, inflation has risen, but the ECB keeps saying that this is temporary. As long as it convinces the markets, interest rates are not likely to rise much, especially medium- and long-term rates. If inflation at 3% only lasts one year, public debts are reduced in similar proportions, which is too small to make a significant impact. If inflation is longer-lasting, the question is how the ECB will react.

The strategy review commits the ECB to keeping inflation around 2%. This is the answer. If inflation becomes entrenched, because wages rise to catch up on prices, the ECB will need to lift the interest rate. That would shrink the fiscal space and possibly trigger concerns about large public debts. It would

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*I The actual impact is more complicated to evaluate.*
The ECB's Revised Inflation Target

also hurt the financial markets. The price of existing bonds, public and private, would fall. Stock prices are currently very high because they assume that interest rates will stay low for a long period of times. They are also kept low by central banks' nonstandard policies that effectively manage the yield curve. Higher interest rates would trigger a re-pricing of shares as the "old world" of low rates would give way to the "new world" of higher rates. This would threaten financial stability. At this stage, the financial markets seem to believe that the ECB would take this risk lightly and would limit increases in interest rates, in effect accepting more inflation than it wishes.

How likely is it, then, that the ECB accepts the combination of fiscal and financial dominance? The strategy review is clear: financial stability is not an objective, only a mean to achieve price stability. Consequently, the ECB is committed to resist the temptation of letting inflation rise long enough to curb public debts, assuming that it is feasible.

The contrast between current financial market beliefs and the statement of the strategy review that "it is important for monetary policy to respond forcefully to large, sustained deviations of inflation from the target in either direction" is puzzling. It is reminding of early September 2008 when the markets were warning of an impending crisis unless the authorities bail out the most troubled banks. The US Treasury refused to bail out Lehman Brothers, the bank collapsed, and the crisis erupted. Then, with the support of the Fed, the Treasury bailed out the largest banks and more.

4.2. **QE and public debts**

A proper assessment of the costs and sustainability of public debts has to go beyond the observed levels of gross debts. First, the proper concept should be the net, not the gross debt. Gross debts are known with a high level of accuracy but not net debts since it requires evaluating the values of public assets, which is arduous. The International Monetary Fund (IMF) undertakes these calculations, which are at best indicative. Table 1 shows the results for a few euro area countries, looking at the ratios to gross domestic product (GDP). The differences are limited and not reliable. On the other hand, the gross debt data ignores public commitments, such as the very sizeable loans provided to firms during the Covid-19 crisis. For better or worse, we use gross debts.

Table 1: Gross and Net Public Debts (% of GDP) - 2021, selected euro area countries

<table>
<thead>
<tr>
<th></th>
<th>Gross debt</th>
<th>Net debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>113.4</td>
<td>99.6</td>
</tr>
<tr>
<td>France</td>
<td>115.8</td>
<td>103.3</td>
</tr>
<tr>
<td>Germany</td>
<td>72.5</td>
<td>54.4</td>
</tr>
<tr>
<td>Italy</td>
<td>154.8</td>
<td>142.2</td>
</tr>
<tr>
<td>Portugal</td>
<td>130.8</td>
<td>121.8</td>
</tr>
<tr>
<td>Spain</td>
<td>120.2</td>
<td>104.5</td>
</tr>
</tbody>
</table>

Source: World Economic Outlook, IMF.

More important is the proportion of the debts held by the Eurosystem as the result of QE. As Table 2 shows, at the end of 2020, about 22 % of gross public debts were held that way. By the end of 2021, this proportion is likely to be significantly higher due to PEPP. It is often noted that this is irrelevant for the public sector, which includes the central bank. The argument is that the central bank receives interest for the debts that it holds, but it must pay interests on the corresponding amounts deposited by the banks from which the debt was bought. The only benefit for the public sector is the difference
between the interest paid to the central bank by the Treasury and the interest paid by the central bank to banks, and the difference is negligible. This is true of course, but it misses two important points. First, the central bank can pay the interest by creating new money, that is borrowing again from the banks, a process that is limitless. Second, the risk of a debt crisis is reduced. Indeed, the "debt" of the central bank is not perceived as a risk. It may become a source of inflation, but that is a much less pressing issue than a run on public bonds.

Table 2: Public debts held by the Eurosystem's central banks (% of total gross debt, end of 2020)

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Austria</td>
<td>21.4</td>
</tr>
<tr>
<td>Belgium</td>
<td>16.0</td>
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<tr>
<td>Finland</td>
<td>21.8</td>
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<tr>
<td>France</td>
<td>17.8</td>
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<tr>
<td>Germany</td>
<td>22.5</td>
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<tr>
<td>Ireland</td>
<td>25.0</td>
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<tr>
<td>Italy</td>
<td>21.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>24.3</td>
</tr>
<tr>
<td>Portugal</td>
<td>18.5</td>
</tr>
<tr>
<td>Spain</td>
<td>23.3</td>
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Source: Sovereign investor base estimates by Arslanalp and Tsuda (2014), updated on line.

The upshot is that, through QE, the Eurosystem is effectively retiring a significant share of public debts. If it paid no interest to banks, the charge of that part of the debt would be nil⁴. Thus, the effective indebtedness of governments is significantly lower than what is shown in Table 2. Reversing QE will involve re-injecting public bonds into the financial markets, which will eliminate some of the protective effect of large-scale central bank holding of public debts.

This is why the ECB could raise its interest rates before it considers reducing its balance sheet, as argued in Wyplosz (2021). Unfortunately, this important issue is not mentioned in the strategy review.

4.3. Climate change and public debts

One way or another, governments will have to massively increase public spending to fulfill their commitments to reduce carbon emissions. In theory, this would be unnecessary if they agreed on a carbon tax whose rate would be steadily rising. An alternative is the generalisation of increasingly expensive pollution permits. Indeed, these measures would provide governments with revenues that they could and should spend in two ways: compensating the part of the population which would be seriously hurt by the tax and providing subsidies that support the transition to zero carbon (transport, R&D, electricity network and storage, insulation of buildings, etc.). Absent government revenues from this most efficient approach, public spending will have to rise by large amounts.

Unless governments raise revenues by other means than a carbon tax or pollution permits, it is difficult to imagine how the budget deficits will not increase very significantly. This will make it impossible to

---

⁴ Currently, the Eurosystem pays a negative interest rate and interest on some public bonds is also negative, although somewhat less so than the interest paid by the Eurosystem. In other countries, the bonds carry positive rates.
stabilise public debts at their currently high levels. These increasingly large public expenditures will also make fiscal policies expansionary, which will strengthen inflationary pressure.

In its strategy review, the ECB writes:

“The Governing Council is committed – within the ECB’s mandate – to ensuring that the Eurosystem fully takes into account the implications of climate change and the carbon transition for monetary policy and central banking. […] The Governing Council will adapt the design of its monetary policy operational framework in relation to disclosures, risk assessment, corporate sector asset purchases and the collateral framework.”

This statement points toward being alert on the financial risks that the transition may create for its own asset holdings. While it mentions "the implications of climate change and the carbon transition for monetary policy and central banking", it says nothing precise about the impact on public debts and inflation.
5. **POLICY UNCERTAINTY**

Crises may have rather short-term impacts, but they leave a legacy. Since the global financial crisis, interest rates have been historically low and much-needed financial regulatory changes have altered the traditional channels of transmission of monetary policy, which made it apparently impossible for central banks to bring inflation rates up to the stated objectives. The euro area debt crisis has been followed by important institutional changes (the Banking Union, partial centralisation of financial supervision). Undoubtedly, the COVID-19 crisis will also leave its mark. All along these crises, public debts have risen. As a result, economic uncertainty has grown larger, and will continue to remain high as the result of climate change and its daunting policy challenges. Importantly, the political landscape has grown in complexity: nearly everywhere, the old dominating parties have shrunk while polarisation has grown.

Facing more uncertainty, monetary policy itself is bound to become more uncertain. One challenge faced by the strategy review was how to cope with uncertainty. The ECB cleaned up its outdated definition of price stability, which called for more precision, while seeking more flexibility, which makes policy more uncertain. It also acknowledged its responsibility for financial stability but subjecting it to the price stability objective provides neither clarity nor flexibility. Its brief statement fails to come to grip with an essential issue: its relationship to the financial markets.

The financial markets understandably require less policy uncertainty. However, quite often, the ECB is rightfully unsure of its next move. It should then say so. Indeed, a key function of financial markets is to deal with uncertainty. The ECB has no responsibility to reduce policy uncertainty if that requires a commitment that it will follow a course of action while it is not sure that it will do so. It can well describe its options and share its doubts, leaving it to the markets to face the resulting uncertainty. This is a proper allocation of tasks. It could lead to periodic jitters in the financial markets, with no serious consequences for the economy itself.
6. ACCOUNTABILITY

The rising uncertainty also matters for the ECB accountability. Much like with the financial markets, the central bank should not seek to project an amount of knowledge that it does not possess. Accountability calls for openness, not for commitments. The European Parliament’s (EP) responsibility is not to try and tie the ECB to a course of actions. Rather it is to verify that the ECB is fully aware of the risks that lie ahead and has worked out adequate contingency plans.

Now that the ECB has completed its strategy review, it could be helpful for the EP to conduct its own review of the Monetary Dialogue. This should lead to renegotiating with the ECB the conduct of the dialogue. It would have to cover the formalities of the process, but also the range of issues to be covered. The ECB’s own review now includes considerations of financial stability and climate change, which could be explicitly included in an adjusted Monetary Dialogue (by the way, this title lacks any reference to the legal requirement that the ECB be accountable to the EP). The EP could also review its own procedures. A key improvement would be to limit the number of interventions and to allow for more follow-up questions (a real dialogue) between those who intervene and the Chairperson of the ECB. The briefing papers include a wealth of detailed analyses that could be used to conduct precise discussions, which could go beyond the currently pre-determined topics.
7. CONCLUSION

The new definition of price stability is a step in the right direction, even though the ECB could have gone further toward the Fed's average inflation targeting. This definition can become most helpful as the central bank navigates new uncertainties. Yet, the review does not deal with some daunting challenges that are already visible. It will need more than a few principles about price stability to deal with such issues as high and rising public debts, financial stability, or climate change.
REFERENCES


A Welcome Revision Rather Than a Revolution

Christophe BLOT, Caroline BOZOU and Jérôme CREEL
Abstract

This contribution is a preliminary analysis of the effect of the ECB’s new strategy, notably the revised inflation target, on inflation expectations. We show that the announcement of the new strategy, although necessary for several reasons, had a minor effect on inflation expectations. This reveals that the reform was either already partially anticipated by the market or too timid. Therefore, we present alternative outcomes of the strategy review.

This paper was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 15 November 2021.
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# LIST OF ABBREVIATIONS

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<tr>
<td>AIT</td>
<td>Average-inflation targeting</td>
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<tr>
<td>ECB</td>
<td>European Central Bank</td>
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<tr>
<td>ELB</td>
<td>Effective-lower bound</td>
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<td>EU</td>
<td>European Union</td>
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<tr>
<td>FOMC</td>
<td>Federal Open Market Committee</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<td>GFC</td>
<td>Global financial crisis</td>
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<tr>
<td>HICP</td>
<td>Harmonised index of consumer prices</td>
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<tr>
<td>NGEU</td>
<td>Next Generation EU</td>
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<tr>
<td>OOH</td>
<td>Owner-occupied housing</td>
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<tr>
<td>PCE</td>
<td>Personal Consumption Expenditures</td>
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<td>US</td>
<td>United States</td>
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<td>ZLB</td>
<td>Zero-lower bound</td>
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EXECUTIVE SUMMARY

• In July 2021, the European Central Bank (ECB) announced the outcome of the review process of its monetary policy strategy, the main change being the revision of the inflation target. It was decided to change the inflation target from "close to but below 2 %" into a symmetric target of 2 %.

• The ECB justifies this reform to better anchor inflation expectations. But this reform may also be essential because it considers the recent changes in the economic environment, in particular the decrease in the natural rate of interest and key interest rate. The increase in the numerical target may provide additional buffer for the conduct of monetary policy.

• We conduct a preliminary assessment of the impact of the new ECB strategy on inflation expectations. We first assess the reaction of market-based inflation indicators to the announcement of the revision. Second, we investigate whether we identify some changes in the dynamics of inflation since July 2021.

• We find that the new strategy has had a minor immediate effect on inflation expectations. Inflation expectations have not significantly increased since the announcement.

• The small effect of the strategy revision on inflation expectations can be interpreted on the one hand by the fact that this information had already been integrated by the markets, and on the other hand by the timidity of the reform.

• It is too early to judge the long-term effects of the review. However, we may wonder whether the ECB could have more seriously considered alternative options for the inflation target. We mention three of them: a higher inflation target, adopting a strategy of average inflation targeting as was decided upon by the Federal Open Market Committee (FOMC), and setting a range around the target point.

• The weakness of inflation in the euro area since the global financial crisis may also result from other forces such as fiscal policies or labour market reforms, recalling that inflation is not exclusively determined by monetary policy. Raising the inflation target may not be enough if the strategy does not address the issue of coordination with other policies affecting price stability.
1. INTRODUCTION

In July 2021, the European Central Bank (ECB) announced the conclusion of the review process of its monetary policy strategy. The main outcome of the review has been the adoption of a revised inflation target, i.e. a symmetric 2% inflation target. Moreover, the new strategy has confirmed the medium-term orientation of monetary policy. This medium-term orientation is meant to avoid short-term monetary tightening decisions after temporary shocks on prices as it provides the ECB with some policy flexibility to assess the demand or supply nature of shocks and their expected length.

Clarifying the symmetry of the inflation target is meant to better anchor inflation expectations in the euro area. In a situation of very low policy rates, driving inflation expectations up can be viewed as the optimal monetary policy when debts are high and may cause deleveraging (see Eggertsson and Krugman, 2012).

In contrast with the Federal Reserve (Fed), though, the ECB has not adopted an average inflation targeting regime. Symmetric deviations from the target are considered as “equally undesirable” by the ECB but they are supposed to be only transitory whereas, in the US, positive deviations over a long horizon are possible if monetary policy has undershot the inflation target in the past. Yet, absent an average inflation targeting regime, past unfavourable outcomes, like inflation undershooting, will never be entirely compensated which may limit the scope for hikes in inflation expectations.

Against this backdrop, we propose a preliminary assessment of the impact of the new ECB strategy on inflation expectations. We draw on two complementary empirical analyses. First, we ask whether the announcement has had an immediate impact on expectations while, second, we check whether the inflation expectations data process has changed since the announcement of the new strategy. Our results point to the fact that the new strategy has only had a very minor impact on inflation expectations. There are several reasons behind this result. First, the announcement might be too recent and only time will tell about its impact. Second, it may also be that the announcement of a symmetric inflation target has made official a feature that had already been incorporated by market participants over the last few years (Reichlin et al., 2021). Third and relatedly, the changes that appeared were not only expected for long (Blot et al., 2019): they have been only quite limited. As we argue in Section 3, the review has given rise to a reform, not a revolution.

The rest of the paper is organised as follows. Section 2 argues that the strategy review was necessary and that its main insight should be to drive inflation expectations. Section 3 presents the main outcomes of the review and empirical evidence on the impact of the inflation target symmetry. Section 4 discusses alternative outcomes of the strategy review and Section 5 concludes.
2. A NECESSARY REVIEW

There were obviously at least four good reasons to review the ECB’s monetary policy strategy in 2021, as discussed for instance in Blot et al. (2019).

First, the previous review of the monetary policy strategy in 2003 happened in a completely different macroeconomic context. The frequency of global crises has substantially increased ever since. These crises have led to long periods of low growth and below-target inflation that require a reappraisal of the ECB’s strategy, if not of its mandate (see infra). They have also led to the use of new policy instruments, like the so-called unconventional monetary policies, that require an assessment and a clarification as to their capacity to be part of the usual or conventional ECB toolkit.

Second, the persistent decline in GDP growth has also brought a reduction in the value of the natural rate of interest (or long-term equilibrium interest rate). This latter phenomenon induces lower policy rates. Although targeting a low inflation rate may have helped anchoring inflation expectations until the 2000s, it might not be sufficient in a low natural rate of interest environment: when both natural rates and inflation are low, there may not be enough monetary room for manoeuvre to reduce policy rates in response to an economic slowdown. To gain traction for monetary policy, a rise in the inflation target or a price level targeting strategy may be contemplated.

Third, academic knowledge advances have permitted to highlight new transmission channels of monetary policy, like the signalling effect, new roles for communication, notably as a driver of inflation expectations, and a better understanding of how decision-making processes in monetary policy committees shape policy decisions.

Fourth, new forms of communication have emerged since 2003, like social media, and may require central banks to target a new audience with new tools and a new, more casual, tone.

Blot et al. (2019) sketched two different strategies for a successful review, the first one with the given mandate and the second one requiring a change in the mandate. Within the current mandate, a clarification regarding the inflation target – its value, its range, deviations around it, the horizon for price stability and also its measure (overall or core) – was meant to be helpful in driving expectations on future ECB policy moves or in driving inflation expectations. As the ECB does not set its mandate which is defined in the Treaty, the strategy review has unsurprisingly introduced only a few changes within the mandate.
3. **A REFORM, NOT A REVOLUTION**

3.1. **The content of the review**

The environment in which the ECB operates has changed since its strategic assessment in 2003, prompting the ECB to reassess its strategy on 8 July 2021. Although the changes made are relatively minor, they cover several aspects: a modification of the definition of the objective, a change in the operational framework and a strengthening of the consideration of climate action.

The first aspect, directly related to its price stability mandate, aims to bring more transparency to monetary policy to better anchor inflation expectations, which have remained low since the beginning of 2019.

Previously, the ECB’s objective was inflation “close to, but below” 2% in the medium term. Euro area inflation had reached this target, with an average of 1.7% since the introduction of the euro. However, this inflation average mixes the period before 2008, when inflation was close to 2%, with the last decade, when inflation has averaged 1.3% and has been negative on several occasions.

Figure 1: HICP inflation and core inflation in euro area

The ECB is now setting a symmetrical inflation target at 2%, with an emphasis on the medium-term horizon. The ECB therefore means that it will react symmetrically to the overshooting and the undershooting of the target. This revision makes the ECB’s actions more flexible, as deviations from the inflation target, while undesirable, will be tolerated. However, unlike the Fed, the ECB will leave to the past what is in the past and will not pursue a catch-up policy, i.e. it will not attempt to make up for past inflation deviations from the target.

Source: Reichlin et al. (2021) from Eurostat.
The change about the inflation target improves the clarity of the objective. It should help anchor inflation expectations because it is intended to be more transparent and better understood by the public.

The review also embraces other important issues which may influence the conduct of monetary policy: the definition of the price index, which is considered as representative of price stability, the use of non-standard measures, the trade-off between price stability and financial stability, and the incorporation of climate change considerations in the policy framework. A full analysis of these items is beyond the scope of this paper. Yet, they are summarised and presented in the following box.
Box 1: Complementary outcomes in the monetary policy strategy review

**Change in the operating environment**

- **The price index and housing costs**

The price index currently used by the ECB as a medium-term inflation target is the Harmonised Index of Consumer Prices (HICP). This index considers rents paid by tenants but does not consider the evolution of homeowners' housing prices. In some cases, there may be a disconnection between rents and housing prices, particularly when there are regulations on rents like ceilings.

Thus, the HICP, since it does not consider the evolution of owner-occupied housing (OOH) prices, only partially considers the evolution of housing prices. The ECB proposes to make it more relevant by including the costs of owner-occupied housing. There are a number of methodological and conceptual options and issues related to the inclusion of OOH costs into HICP, which are discussed in great detail in the second set of papers prepared for this Monetary Dialogue.

- **Communication on tools**

If monetary policy is now symmetrical in terms of target, it is not symmetrical in terms of policy instruments. Indeed, the existence of the zero lower bound (ZLB) or effective lower bound (ELB) forces central banks to resort to unconventional policy instruments to ensure price stability when key interest rates are at their lowest. These unconventional tools have been used by the ECB since 2008. In its strategic review, the ECB clarifies their use by insisting that key interest rates remain the main instruments of its monetary policy and states that it will continue to use unconventional monetary policy tools on an exceptional basis to cope with the monetary policy restrictions imposed by the ZLB/ELB. The ECB confirms the use of unconventional tools in times of crisis and has included them in its toolkit. Thus, the ECB settles the debate on the permanent use of unconventional monetary policy tools.

- **Financial stability**

A final change to the ECB’s operational framework concerns the revision of its pillars. The ECB’s strategy has always been based on two pillars. To justify its decisions, the ECB relies on two axes: an economic axis and a monetary axis. In 1999, the monetary axis was the prominent axis (reference value of the M3 aggregate). In 2003, at the time of the first strategy review, the ECB de facto reversed the priority given to the two pillars and dropped the reference value for M3. From now on, the ECB has decided to give a financial stability dimension to the monetary pillar. Indeed, the use of unconventional monetary policy tools has led to large-scale asset purchases. As these unconventional tools increase the potential for a build-up of financial vulnerabilities and imbalances, central banks must redouble their efforts to assess financial stability risks.

- **Taking climate issues into account**

The final point is the consideration of climate issues in the operational framework of monetary policy. The ECB promises to take this into account when designating the private securities it buys and those it accepts as collateral for its loans to banks. While the precise measures have yet to be defined, the principle at work is to make “brown” assets progressively less attractive for banks and to buy fewer of them.
Why did the ECB consider changing its interpretation of the price stability objective? The revision aims to update the strategy to the new challenges faced by central banks. As emphasised above, the ECB had to account for the low inflation environment which has been prevailing since the global financial crisis. In this economic context, the revision may have also amended the drawbacks of the former strategy. At the outset of the ECB, in 1999, price stability was defined as a "year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2 %". For a newly created institution, the first task was to rapidly establish its credibility by communicating on a low inflation target (Hartman and Smets, 2018). With this formulation, the ECB signalled that it had an upper limit: inflation above 2 % was deemed inconsistent with the price stability objective enshrined in the Treaty. However, such a definition made unclear what the precise target was and could mean for instance that a zero inflation rate would be compatible with the definition of price stability. To make it clear, it implied that the monetary policy stance would be made "systematically" restrictive when inflation was above 2 % but it did not imply that it would be expansionary for any inflation rate between 0 and 2 %. If we consider that the implicit target lay somewhere in the middle between 0 and 2 %, the ECB would be able to motivate a restrictive monetary policy stance if the inflation stands at 1.5 % for instance. A first review of the strategy occurred in 2003. It stated that inflation should stand "below, but close to 2 %". It recognised that the first definition of the objective would not be sufficient to avoid deflation and prevent the ECB from hitting the ZLB/ELB. The clarification was expected to bring some buffer in the case of negative shocks.

However, despite the evolution, it was still not clear what the precise target was. What does "below, but close to" mean? 1.7, 1.8 or 1.9? Besides, despite the apparent clarification, the formulation of the objective was still considered as asymmetric, which it was de jure since no lower bound was defined. Consequently, it suggested that the ECB was more concerned – and reacted more promptly – when inflation exceeded 2 % than when it undershot the target. The risk of asymmetry was clearly perceived by the ECB and brought its former President Mario Draghi to state in the introductory statement of the 25 July 2019 meeting that "the Governing Council is determined to act, in line with its commitment to symmetry in the inflation aim". He was even more clear when answering questions from the media by claiming the ECB would not tolerate deviations from the target "on both sides" and that 1.9 % was "close to, but below, 2 %". With the July 2021 review of the strategy, it makes no doubt that the ECB will consider a symmetric reaction when inflation is below and above the target. Furthermore, it also made clear what the target is by providing a single numerical figure: 2 %.

Even if the revision of the inflation target has been announced only a few weeks ago, we may wonder whether it has already had an impact. As the revision has been clearly communicated on 8 July 2021, it may have triggered a reaction on financial markets. Monetary policy decisions are indeed scrutinised by financial markets, which react to news related to the economic and the monetary outlook. A large empirical literature has been devoted to the effect of central banks’ communication emphasising notably the reaction of asset prices to monetary policy announcements. Communication on the monetary policy strategy was also assessed, notably for central banks announcing the adoption of an

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1 At that time, neither the Federal Reserve nor the Bank of Japan had formulated a numerical target for their inflation objective whereas it was clearly defined as 2 % for the Bank of England.
2 Central banks do not follow such an automatic rule. The objective is defined in terms of medium-term inflation and some exceptional circumstances may always explain a short-term deviation from the target and prevent the central bank from reacting systematically once the inflation rate exceeds the threshold.
3 On 8 May 2003, Otmar Issing was asked to explain the meaning of the "close to 2 %" statement and answered that the ECB expected "inflation expectations remaining in a narrow range of between roughly 1.7 % and 1.9 %".
inflation targeting strategy. Gürkaynak et al. (2010) show that the Bank of England's communication on its monetary policy strategy, entailing the announcement of an inflation target, has helped to anchor long-term inflation expectations. The announcement in January 2012 that the Federal Reserve would adopt a 2% inflation target has reduced the response of long-term inflation to news as illustrated by Bundick and Lee Smith (2018).

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5 The Bank of England became independent in 1997, with the aim to achieve a 2% inflation target.
3.2. The revised inflation target: a preliminary analysis

The revision of the strategy announced by the ECB entails several dimensions but the reformulation of the inflation target with now an explicit numerical target of 2% is a transparent announcement, of which the consequences are easily understood by financial markets and may rapidly be embedded in inflation expectations if the announcement is credible.

The review of the strategy is a very specific event, which is supposed to convey information about monetary policy over several years. Although the former review dates back 2003, it may be noticed that the new review has been a long process since Christine Lagarde has contemplated the possibility after her first Governing Council meeting on 12 December 2019. Thus, the presentation of the review on 8 July 2021 did not come as a surprise although it was undoubtedly a significant event containing announcements aiming to influence the conduct of monetary policy for several years. It should consequently be embedded in long-term expectations.

However, the 5year-5year forward inflation expectations, which is the preferred measure of long-term inflations in the empirical literature, has not increased in the days following the announcement (Figure 2). It may be noticed that expectations were decreasing during the days preceding the announcement. The decrease has slowed down after the revision and expectations started to increase by the end of July. Yet, the increase may not be related to the change in the strategy but rather to news occurring after. The rise in oil prices and other information related to the inflation outlook have triggered an increase of inflation during summer 2021, which may also be mirrored in the long-term inflation expectations.

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6 The 5year-5year forward inflation indicator stems from swaps and represents the expected inflation in 5 years for a 5-year period. It is the most used indicator to capture long-term market-based inflation expectations and it is less influenced by short-term inflation developments and may provide information on the long-term expectations anchor.
Figure 2: The 5-year-5-year forward inflation expectations in the euro area around the revision (8 July 2021), in %

Source: Datastream (Eikon Reuters).

The comparison of the inflation expectations dynamics in the euro area and in the United States around the announcement of the revision would suggest that the Federal Reserve’s communication has been more effective or that the review of the strategy was substantial in the United States. The Federal Reserve has announced the outcome of the revision of its strategy in August 2020. The numerical target was not modified but it was stated that the Federal Open Market Committee (FOMC) would “seek to achieve inflation that averages 2 percent over time”, a strategy called average inflation targeting since it entails that the central bank would tolerate an inflation above 2% if inflation has been below 2% for some periods. Before and after this announcement, it may be noticed that long-term inflation was increasing in the United States (Figure 3).
In the following, we proceed with an event study approach to estimate the possible effect of the ECB announcement on inflation expectations. We regress the daily change in the market-based inflation expectations indicator on a dummy variable equal to 1 on the day of the revision.

The following equation is estimated for the euro area:

\[ \Delta E\pi_t = c + revision_t + ECB_{meeting_t} + mp\text{shock}_t + \epsilon_t \]

where \textit{revision} is a dummy variable which equals 1 on 8 July 2021 and zero otherwise. The equation is estimated with daily data from January 2014 to 11 October 2021. In the baseline equation, we control for the dates of other ECB meetings – with a dummy variable equal to 1 when there is a Governing Council during which a monetary policy decision was taken and followed by a press conference – and for monetary policy shocks calculated as the change in the 2-year overnight interest rate swap (OIS) rate on the days of Governing Council meetings. Two measures of market-based inflation expectations have been considered: the 5-year-5year forward inflation expectations and the 10-year forward inflation expectations. The event study methodology assumes that no other important news has been released on the day of ECB press conferences.

Columns (1) and (2) of Table 1 confirm the visual inspection of Figure 1 since the parameter associated with the day of the revision is negative and statistically significant. We have also tested the effect only on days of Governing Council meetings. In that case, the variable \( ECB_{meeting_t} \) is removed from the regression. With this specification, we test whether information conveyed by the revision differs from the standard information – about the monetary policy stance – communicated by the Governing Council. We have finally tested whether additional information could have been transmitted during the Governing Council meeting following the announcement of the revision. This meeting was held on
22 July 2021, and it was the first meeting during which the policy statement accounts for the consequence of the revision. Financial markets have then become aware of the new formulation of the inflation objective within the statement. These results are displayed in columns (3) to (6) and do not suggest a positive response of market-based inflation expectations. The reaction of inflation expectations on 22 July 2021 was also negative and significant. It may either suggest that financial markets did not consider that the new objective formulated in the introductory statement would change the dynamics of inflation or that they expected expansionary monetary policy measures that did not occur.

Table 1: The market reaction to the announcement of the ECB revision of the strategy

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<th>Source: Authors’ estimations.</th>
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<td>Note: p-values in brackets. The estimations accounts for robust standard errors.</td>
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Not only market-based expectations matter though. Indeed, central banks do not only talk to "Wall Street" but also to "Main Street". This dimension of communication to the general public is usually assessed through surveys. Those surveys may either be conducted with professional forecasters, which may not be strictly speaking considered as part of the general public – or with a panel of households. However, in the case of the euro area, data from household surveys are scarce and the review of the strategy has been announced too recently to be noticeable in the data. Here, it may be worth comparing with the situation in the United States where the review of the strategy has been made public a few months ago. Both the Michigan Survey – conducted with households – and the survey of professional forecasters suggest that long-term inflation expectations have increased in the United States after the August 2020 announcement by the FOMC (Figure 4). Such an upward revision is consistent with the expectation that the FOMC will target higher inflation (above 2 %) in the coming years since inflation has undershot the target in the recent past. This interpretation is yet challenged by Coibion et al. (2020) who have conducted a specific survey to assess whether households had heard about the review of the strategy and if they had revised their inflation forecast. To that end, they used a daily survey interviewing a panel of households before and after the announcement. They show that only a very small share of households was aware of the decision by the Federal Reserve to adjust its monetary policy strategy. Furthermore, those who received the information did not change their expectations about inflation.

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As stressed by Blinder et al. (2008) in their survey about communication: "It may be time to pay some attention to communication with the general public".

Those surveys are realised quarterly.
An alternative strategy to assess the potential effect of the revisions is to test whether the data-generating process of inflation expectations have changed since the announcement. Here again, daily data on market-based inflation forecasts may help to provide a first and quick analysis. We may indeed expect that if the upward revision of the target is credible, it would rapidly be mirrored in the expected inflation dynamics inducing notably a change either in the constant or in the autoregressive component of the long-term inflation forecast in the following equation:

\[
\tilde{E}_t = \alpha + \rho \cdot \tilde{E}_{t-1} + \beta \cdot X_t + \epsilon_t
\]

where \(X_t\) is a vector of control variables including an indicator of stock market implied volatility (Vstoxx), the lagged value of the overnight interest rate in the euro area (Eonia) and the 1-year ahead market-based inflation forecast. This last variable enables to capture the current inflation dynamics. Even if the explained variable is a long-term inflation expectations indicator, we cannot exclude that its dynamics is not driven by news regarding current inflation. The parameter \(\rho\) captures the persistence of inflation forecasts and \(\frac{\alpha}{1-\rho}\) measures the long-term – when no shocks occur – value of the inflation forecast. We estimate two alternative specifications according to whether we consider a break only in the constant term (\(\alpha\)) or in both the constant and the autoregressive terms (\(\alpha\) and \(\rho\)):

\[
\tilde{E}_t = (\alpha + \text{revision}_{\text{ecb}}) + \rho \cdot \tilde{E}_{t-1} + \beta \cdot X_t + \epsilon_t
\]

\[
\tilde{E}_t = (\alpha + \text{revision}_{\text{ecb}}) + (\rho \cdot \tilde{E}_{t-1} + \text{revision}_{\text{ecb}} \cdot \tilde{E}_{t-1}) + \beta \cdot X_t + \epsilon_t
\]
where $\text{revision}_t$ is a dummy variable equal to 1 from 8 July 2021 until the end of the sample. Both equations are estimated with daily data from 1 January 2014 until 11 October 2021. According to the null hypothesis, if the revision of the inflation target changed the data-generating process of market-based inflation expectations, then the dummy variable $\text{revision}_t$ would be significantly positive. It would lead to an increase in $\frac{a}{1-\rho}$. Finally, long-term inflation expectations ($E\pi_t$) are measured by the 5-year-5-year forward inflation expectations or the 2-year, 3-year, 4-year, 5-year and the 10-year ahead inflation expectations. All data come from Datastream.

The results for the estimations are displayed in Table 2 and Table 3. In the last two rows, we calculate $\frac{a}{1-\rho}$ before and after the break.

When we only allow for a break in the constant term, we find that it is significant and trigger an increase in the long-term inflation forecast (Table 2). Actually, the dummy variable $\text{revision}_t$ is positive and statistically significant (at 10%). With the 5-year-5-year forward inflation indicator, the expected inflation would then increase by 0.2 percentage points from 1.7% to 1.9%. It would suggest that the review has helped anchor inflation expectations on a higher long-term value. This is also the case for 2-year ahead, 3-year ahead, 4-year ahead, 5-year ahead and 10-year ahead expected inflation indicators even though the long-term value is weaker, which is partly consistent with the horizon considered.

However, we need to remain cautious because the conclusion is not robust when we allow for a break in the constant and the autoregressive term (Table 3). For all those estimations except the 3-year ahead inflation forecast, neither the change in the constant nor the change in the autoregressive parameter are significant even if the implicit long-term value for inflation expectations increases by 0.2-0.3 percentage points. It may be noticed that at the 3-year horizon, the only one for which breaks are statistically significant, the long-term value of the inflation forecast decreases. Otherwise, and incidentally, the 5-year-5-year inflation expectation would stand at 2.04% instead of 1.74% before the announcement of the revision of the inflation target.

These results suggest that the effect of the revision of the inflation target announced by the ECB on 8 July 2021 has been modest. It may not be surprising as the revision is itself modest with its modification of a “close, but below” 2% into 2%. It is also important to keep in mind that the change may be too recent to be captured in the data-generating process of inflation expectations in the euro area.
Table 2: Did the ECB revision change the inflation expectations dynamics?

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Source: Authors' estimations.

Note: p-values in brackets. The estimations accounts for robust standard errors. L stands for the lag operator.

Table 3: Did the ECB revision change the inflation expectations dynamics?

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</table>

Source: Authors' estimations.

Note: p-values in brackets. The estimations accounts for robust standard errors. L stands for the lag operator.
4. WHAT ELSE COULD HAVE BEEN DONE?

Even if it may be too soon to draw firm and definitive conclusions on the success of the target revision, we cannot rule out that the current review has been too timid, which brings us to wonder whether the ECB had alternatives regarding the revision of the target. Three options that the ECB might have considered: a higher inflation target, adopting a strategy of average inflation targeting (as was decided upon by the FOMC), and setting a range around the target point.

4.1. Should the ECB have opted for a higher inflation target?

The 2 % target has been the numerical figure most widely adopted by central banks in advanced economies. The choice of the ECB seems consensual at first sight. The Bank of Japan, the Bank of England and the Federal Reserve also consider that price stability is achieved with a 2 % inflation rate. The choice of the target point is notably crucial regarding the risk of hitting the ZLB/ELB. The higher the target, the higher the policy rate, all else equal, and then the more space central banks have to adjust monetary policy in case of negative shocks. However, it also depends on the natural rate of interest (generally called r*). According to a standard Taylor rule, the policy rate (i_t) should be set according to the following relationship:

\[ i_t = r^* + \pi_t + \alpha_y + \lambda (\pi_t - \pi^*) \]

With \( y_t \) the output gap and \( \pi^* \) the inflation target. Supposing that expected inflation is equal to the target (\( E\pi_t = \pi^* \)), then:

\[ i_t = r^* + \pi^* + \alpha_y \]

The level of the policy rate also depends on the level of the natural rate of interest (r*). A lower r* increases the probability that the central bank is constrained by the ZLB/ELB as shown in a more detailed model by Andrade et al. (2018). They show that while a 1.4 % inflation target was consistent with a pre-crisis estimation of r* of 2.8 %, a one-point decrease of r* should lead the central bank to revise upward its inflation target by 0.8 point. With a value for r* of 1.8 % in the euro area, it would be optimal to set the inflation target at 2.2 % and hence above the current level. It might even be higher according to some estimations pointing to a very low level of the natural equilibrium rate in the euro area (Holston, Laubach and Williams, 2017).

The former analysis rests on the implicit hypothesis that the ECB is able to achieve a higher inflation rate. However, the recent period may cast doubt on this hypothesis. The period since the global financial crisis has been characterised by an inflation rate regularly well below the 2 % target in the euro area despite an expansionary monetary stance and the use of non-standard measures. It might be argued that more could have been done by the ECB and that there have been other forces like restrictive fiscal policies and structural labour market reforms that have weakened the bargaining power of workers, that all weigh down on the inflation rate. Yet, the credibility of a central bank announcing that it will aim at achieving a higher inflation rate after it has been unable to reach a lower one may be quite limited.

4.2. Should the ECB have adopted an average inflation strategy?

The Federal Reserve has also conducted its strategy review in 2020. Contrary to the ECB, it did not announce a revision of the inflation target but rather adjusted the strategy by stating that it would seek to achieve inflation that averages 2 % over time. This strategy is called average inflation targeting (AIT), as it entails that the central bank should tolerate an inflation above the target "following periods when inflation has been running persistently below 2\%”. Thus, over some horizon, the inflation rate would
increase at the 2% rate in average. The aim of this strategy is to strengthen the anchoring of inflation expectations on the target. The main argument is that when the central bank only seeks to achieve a target point, periods of undershooting are not compensated so that agents observe that average inflation is below the target and adjust their expectations consistently. The period following the global financial crisis has been characterised by this phenomenon in the euro area as well as in the United States (Figure 5), which may have contributed to explain the slow decrease of long-term expected inflation, notably in the euro area (Figure 6). Thus, signalling that the central bank will not only aim at bringing inflation back to 2% but will seek to raise inflation above the target to ensure that average inflation equals 2% may provide a better anchor for expectations.

The bias between expected inflation and the inflation target would mimic the trend inflation, which would implicitly stem from a bias in shocks hitting the economy. In the case of an inflation targeting strategy, the central bank would seek to bring inflation back to 2%. The ex-post inflation average would then be below 2%, explaining why expected inflation remains below the target. In the case of the AIT strategy, the central bank conveys the signal that it will adjust the monetary policy stance to offset the bias. It will either become more expansionary or avoid turning restrictive too rapidly once inflation has reverted to the target. The AIT strategy is then particularly suited if there are periods with bias to inflation shocks either negative or positive. The ECB has clearly not committed to a restrictive stance of monetary policy as soon as inflation in the euro area exceeds 2%. There is necessarily some leeway since the inflation objective is supposed to be achieved over the medium term, as reminded in the review.

The drawback of an AIT strategy is that it may increase short-term uncertainty. Actually, the short-term target becomes to some extent unpredictable and unstable insofar as deviations from the target are tolerated by the central bank in the near future. As Amano et al. (2020) and Honkapohja and McClung (2021) emphasise, a key dimension of the AIT strategy is to communicate the window over which the average inflation is calculated in order to help agents to understand how monetary policy will be adjusted and how long will the period of potential overshooting of the inflation rate be. In this respect, the President of the Federal Reserve, Jerome Powell, has not provided details on the window. It would also be relevant to communicate on a ceiling to signal the maximum level of inflation that the FOMC would tolerate. It was not an issue when the strategy was announced but it has become more critical a year later with inflation exceeding 4% since May 2021.

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9 This would have been the case in the euro area according to Ciccarelli et al. (2017).
10 If the bias is positive, AIT entails that monetary policy remains more restrictive to offset periods of inflation overshooting the target.
Figure 5: Average inflation since 2009 in the euro area and the United States, in %

Source: Eurostat and Bureau of Economic Analysis.

Note: The average is calculated over a 5-year horizon. Inflation is measured by the HICP in the euro area while it is measured by the personal consumption expenditures price index in the United States, which are the respective indexes targeted by the ECB and the FOMC.
The ECB’s Revised Inflation Target

4.3. Should the ECB have adopted a target range?

The ECB could also have announced some range around the inflation target. It may indeed provide additional information for individuals since inside the range, the central bank has more leeway to decide whether it should change the stance of monetary policy. It may for instance help to better handle trade-offs between price stability and the other objectives of monetary policy. By formulating that inflation should lie within a range, the central bank can better motivate deviations to the target point without undermining its credibility.

Announcing a range also seems to be more realistic as central banks cannot be expected to achieve the target with a complete precision. There are always many sources of uncertainty related to the effectiveness of monetary policy, its transmission delays, future shocks, the relation between activity

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11 The credibility problem would not occur if inflation exceeded the target because of positive shocks. In that case, the central bank would simply avoid having to shift to restrictiveness too early.
and prices (the slope of the Phillips curve). These uncertainties affect inflation and may eventually challenge the central bank’s credibility. Besides, as there are no welfare differences when inflation is at 2.5% instead of 2%, a +/- 1 point band may thus be warranted.

Finally, the measure of inflation relies on some *ad-hoc* indicators and is inevitably subject to measurement errors, which may stem from the breakdown of quality and price effects, the inclusion of all the dimensions of the costs of living, which are not accounted for by a point target.

All these arguments call for some flexibility, which is offered by the range. In practice, by focusing on the medium-term central banks recognise that they cannot strictly and permanently achieve the point target. In the short term, there is always an implicit range but fixing the lower and the upper bound might help steering expectations of future monetary policy when short-term inflation approaches the limits.
5. CONCLUSION

After several months of discussions and reflections within the Governing Council, the ECB has made a few changes to its monetary strategy that are supposed to account for the recent developments in the economic environment, in the academic literature and in the monetary policy practices.

Four months after the announcement, it is too early to draw final conclusions on the benefits and drawbacks of this review. Some decisions have not been fully implemented yet. A crucial aspect of the review relies on the precision of the inflation target. Instead of having to be "close, but below" 2%, there is now a symmetry around 2%. This decision is expected to clarify the definition of the main objective of the ECB – price stability.

Our first, though only preliminary, assessment suggests that it has had minor effects on inflation expectations. Our results may mirror the fact that the revision of the inflation target was only a marginal progress, not a revolution. It may be added that the effect of the inflation target revision on long-term inflation expectations could be blurred by other decisions. The ECB raised the target but also contemplated changing the indicator – the HICP – used to measure inflation. Changing the thermometer, by incorporating owner-occupied housing costs, may better capture the cost of living of citizens of the euro area but may also entail changes in the measure of inflation. As pointed out by the ECB (2016), this would lead to differences in the inflation up to 0.2 percentage points but there would be no difference on average between the two measures of the inflation rate. At the end, if the minor upward revision (0.1 percentage points) of the target is offset by a slight inflation increase resulting from the introduction of OOH costs in the measure of inflation, we should not be surprised that the revision had no significant impact on long-term inflation expectations.

The aim of the review was to communicate on the key aspect of the strategy and not to provide a critical assessment of past monetary policy. However, it is crucial to be aware of the shortfall of the former strategy and of past failures before changing the strategy. Since the global financial crisis, inflation has been low and certainly below the inflation target. The reasons behind this trend should be clarified. If there are structural, it may cast doubt on the ability of the central bank to achieve the new target, all else equal. There is a risk to undermine the credibility of the ECB. We have hypothesised that it may stem from other forces such as fiscal policies or labour market reforms. The main lesson to be drawn from this period is that central bank may not be as powerful as we have thought. Inflation is not exclusively a monetary phenomenon and therefore, it urges coordination with other policies affecting price stability, the first objective of the ECB. Furthermore, the use of non-standard measures has strengthened the interactions between fiscal and monetary policies (Reichlin et al., 2021). The sovereign debt and the COVID-19 crises have also highlighted the institutional flaws of the euro area. Heterogeneity of inflation rates and long-term interest rates remains an issue for euro area governance and also for monetary policy (Blot et al., 2019). These issues have been overlooked in the review but will certainly remain for future ones.
REFERENCES


The ECB’s Revised Inflation Target


